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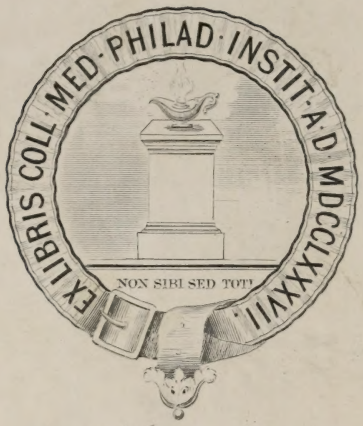

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Presented by

R. J. Douglass, M.D.

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EDITORS:

S. J. JONES, M. D., L.L. D.

W. W. JAGGARD, A.M., M.D., HARLOD N. MOYER, M.D.

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ORIGINAL COMMUNICATIONS.

A CASE OF EXPULSION OF A LARGE SUB-MUCOUS FIBROUS TUMOR OF THE UTERUS PER VIAS NATURALES, OR COLPO-MYOMOTOMY.

By JAMES H. ETHERIDGE, A. M., M. D., *Professor of Therapeutics in Rush Medical College, Chicago.*

[Read before the Chicago Medical Society, December, 1885.]

Mrs. A. B., aged forty-three years, married twenty-eight years, mother of three children, first suffered from menorrhagias six years ago. Three years ago this fall I first saw her. She was losing an alarming quantity of blood at a menstruation then. Ergot seemed to be all that was needed at that time. Since then she has had dangerous hæmorrhages every fall. During the settled cold weather of winters, and in the springs and summers I have seldom had occasion to see her.

The first thorough examination permitted, in 1882, revealed the usual objective symptoms of an enormous sub-mucous, uterine, fibrous tumor. The top of the *fundus uteri* extended one inch above the umbilicus. The lateral diameter equaled its longitudinal diameter. The sound was passed into the uterus eleven inches. Very little, or no rectal or vesical dis-

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turbance was ever experienced. The principal inconveniences experienced were hæmorrhage and a "high stomach."

Generally speaking, she has been an exceptionally healthy woman. She has had a great many induced miscarriages—cannot tell how many. She has been repeatedly brought to death's door from the hæmorrhages following abortions. Aside from these experiences, she has never been sick except when in childbed. There appear to have been no attacks of localized peri-uterine peritonitis, so very common in the history of uterine tumors. Her recuperative powers are simply astonishing. She seems to belong to the class of women that, Keith says, "cannot be killed."

Two years ago this fall I visited her for a hæmorrhage so severe that a sponge tent had to be used. Its use was supplemented by ergot and rest. She was blanched to a surprising degree. However, in a few days she was up and around, and in her usually vigorous health. During the winter months following, she had several menorrhagias but I was not summoned, she, instead, resorting to rest and ergot, and recovering as usual.

On November 12th, 1884, I was summoned to care for her in a most unpromising condition. She had been under the care of a homœopathic physician called to her when she was having her customary frightful first hæmorrhage of the autumn. It was then thought best to retain him in charge of the case. During his care of her, a consultation was held with a regular physician who deemed incisions of the cervix the proper thing to do to prevent repetitions of the hæmorrhages—a proceeding first adopted by Baker Brown. This cutting procedure was followed by a double crural phlebitis and its resultant enormous anasarcous distension of the legs.

The hæmorrhage had left her almost exsanguinated. Diurnal

development of fever late in the afternoon showed the "malarial" complication of the case. A stomach without sufficient blood to enable it to digest the simplest and blandest articles of food had been made to receive every six hours, fifteen minims of *Hydrastis Canadensis* Fluid Extract and twelve minims of *Aromatic Sulphuric Acid* for a period of six weeks. *Hydrastis* was administered to "spoil," destroy, clear out, annihilate, abolish, or cure the tumor—or to do something else to it. The wonderful property of curing uterine fibrous tumors has been ascribed to *Hydrastis Canadensis* by the homœopathic physician attending my patient. He fortified his opinions by writing a pamphlet on the use of *Hydrastis Canadensis* in treating uterine fibroids, and the patient having read the reprint, *knew* that *Hydrastis* would cure her! Every experienced physician understands what it means when a patient *knows* what will, and what will not cure a certain malady. It is much easier to calculate eclipses than to persuade such persons that it is possible that they are misinformed.

The inability to take food was immediately diminished and soon abolished after stopping the sulphuric acid. She rapidly began to renew her blood, the pallor gradually disappeared and in less than thirty days she was up and around her room, and in sixty days she was off on a journey.

During the remainder of the winter, the spring and summer, up to the time of her customary autumnal hæmorrhage, she had enjoyed exceptionally good health.

This last hæmorrhage began October 8th, 1885, and was allowed to go on twenty-four hours before I was summoned. I saw her at 5 A. M., and used a sponge tent at once. It was soon forced out, and at 4 P. M. I introduced three sponge-tents into the cervical canal and gave her an enema of 90 minims of Fluid Ex. Ergot, and then the trouble began.

Such powerful uterine contractions followed this use of ergot, with their accompanying pain, that the capsule of the tumor was ruptured. The hæmorrhage ceased at once and permanently.

She had, however, lost so much blood that her lips were colorless and the cardiac movements irregular and jerky. The foot of the bed was considerably elevated, and food and stimulants were freely used. Two days thereafter a strong odor was first observed from the sanious vaginal discharge and examination revealed in the vagina the commencing extrusion of the grangrenous fibrous tumor. The next day the os was found completely dilated and about one pound of the tumor was pulled and cut away. Without exception it was the most disgustingly nauseating work that I ever did. The odor had become most sickening. The tumor was pultaceous, excessively friable, and very difficultly graspable. The day following I succeeded in getting away about a half a pound of the tumor. Two days later I succeeded in cutting and dragging away about as much more. By this time the advanced portion of it was projected through the vulva and spread out over the labia in the shape of a whitish, salvey, sticky mass of ineffably nasty, malodorous putridity that was enough to test the equipoise of one's stomach to a most trying degree.

The uterine contractions with their resultant pressure were a most conspicuous feature of the patient's condition. She was incessantly under the exhibition of ergot, a fact that she was wholly ignorant of then, and is still, for aught I know. Much relief was always experienced when pieces of the growth were removed, in the operations.

Three days later, with the patient under ether, assisted by Prof. Parkes and Drs. Marcusson and Mitchell, of the Presby-

terian Hospital, I attempted to remove the entire remainder of the tumor. The attempt was only partially successful. About two pounds more were removed. Some small solutions of continuity of the vaginal tract were made during the operation this day and no sepsis followed, although a creamy, ichorous stream of gangrenous *débris* was constantly flowing from the uterus for several days thereafter, affording another illustration of inability to kill this woman by any common causes.

After recovering her consciousness from anæsthesia she went into collapse and nearly died. She became pulseless, delirious, cyanotic, the breathing was very labored and sputtering, intense restlessness supervened, vomiting came on and she bade fair to expire in a few moments. I never saw a human being ap roach so closely to the portals of death and not enter them. Brandy by the mouth, rectum and hypo dermatically, hot applications externally and digitalis under the skin seemed to save her. Six ounces of brandy were used in less than two hours. After a time she reacted fully and soon began again the use of concentrated food and free stimulants.

Five days thereafter I was enabled alone to cut, pull and tear away about one pound more of the tumor. By this time she was in a most unpromising condition. She was becoming icteric, her stomach rejecting nearly everything and yet she was tormented by incessant thirst. Her pulse was becoming progressively weaker. The rectum was the only means remaining to nourish her through, and around this viscus an abscess in the cellular tissue had begun developing. In addition to this, several small abscesses began to trouble her greatly where the sub-cutaneous injections of brandy and digitalis had been made. The horrible fetor of the vaginal discharge was unabated.

Five days later another and final attempt at removal of the tumor was made, and I was enabled unaided, to remove nearly

a pound more of the growth. During the five days preceding this last attempt at removal the uterus had decreased in size quite rapidly. The fetid vaginal discharge had been exceptionally free, showing that the uterine contractions from ergot were a powerful adjunct in effecting expulsion. At this last operation I was enabled to secure a large part of the pedicle with the ècraseur. An attempt at securing a second piece, similarly, resulted in breaking the ècraseur-wire three times. Fortunately I was able at this operation to grasp and cut away considerable pieces of the stump.

In all of these operations it was impossible to do more than was done at each sitting. The patient became easily exhausted and could endure no longer. When I etherized her, I expected to remove the entire mass, but the extreme friability of the accessible portion of it utterly precluded drawing it down. Everything depends on the possibility of pulling down the mass when it is desired to remove the whole tumor. In this case I was reduced to the necessity of subjecting the patient to several operations and of letting her run her chances of escaping fatal septicemia. When enough of the tumor was within reach to remove she was subjected to a repetition of the trying ordeal. Each succeeding operation was productive of more and more exhaustion.

From the beginning to the end of the time of the discharge, per vaginam, of the deliquescent putridity of this growth was a period of fully three weeks. During nearly all of that time I was almost sure that she would succumb. All authorities agree in saying that a very large share of patients who shed uterine fibrous tumors by gangrenous disintegration, die of blood poisoning. Consequently I fully expected my patient to die.

I can only estimate approximately the probable weight of the tumor. I removed—I should say—about six pounds, by

weight, of it. It is fair to estimate that, *at least*, as much more came away in a semi-liquid form, for, during a period of fully twenty-one days there was an incessant flow of a yellow stream of gangrenous detritus from the uterine cavity. Hence the conclusion may be safely reached that the tumor must, originally, have weighed 12 or 13 pounds.

1634 Michigan Ave.

REPORT OF A CASE OF PELVIC ABSCESS, WITH REMARKS UPON THE TREATMENT.

By HENRY T. BYFORD, M. D., *Chicago.*

(Read before the Chicago Gynæcological Society, December 18th, 1885.)

Mrs. T., aged twenty-five years; married five years; German descent; of nervous temperament; small and slight in figure, but in good general health, consulted me, during the fall of the year 1884, for sterility and dysmenorrhœa. She had never menstruated without pain, but had otherwise enjoyed good health. An examination revealed a small uterus and cervix, with acute anteflexion and consequent apposition of the anterior and posterior uterine walls. Slippery elm tents, used about once in eight days, alternated with glycerine tampons, had for their effect a gradual relief of the dysmenorrhœa.

About the middle of the following February, I was called to her house to treat her for pelvic cellulitis, contracted a week before while returning home from a dance. The whole pelvic connective tissue seemed involved, and large tender lumps could be felt externally in the left iliac region.

Six weeks from the beginning of the attack, an abscess opened into the anterior wall of the rectum, about two inches from the external anal orifice. On account of the extreme debility of the patient, her horror of operative procedures, and

the absence of any well marked fluctuation, all surgical interference with the suppurative process had been out of the question.

Attempts were then made at thorough antiseptic treatment, but neither elastic nor flexible metal tubes, although easily introduced into the abscess, could be tolerated there longer than a few hours at a time. Antiseptic irrigations, of carbolic and boracic acid solutions used four times a day, were then relied upon, but were inefficacious, for the pockets often discharged foul-smelling pus soon after the dressings.

In the meantime the pulse remained in the neighborhood of 120°, and the temperature fluctuated between 99° and 102° F.; attacks of acute suffering and septicæmic diarrhœa required opiates for their relief; the bacillus tuberculosis was discovered in the pus; yellow pigmentary deposits covered her face, and emaciation became extreme, her weight ranging between eighty-two and eighty-three and one-half pounds. Her courage began to fail, and finally, after the concurrent recommendation of the consultants, Drs. Wm. H. Byford, J. E. Owens, Geo. M. Chamberlin and Martin Matter, she consented to an operation.

Accordingly on the 6th of June Dr. Wm. H. Byford operated according to his usual method in such cases. After etherization, he forcibly dilated the sphincter of the anus, tore open the fistulous track with the finger, and then enlarged the opening in the same manner, in the direction of the lowest part of the cavity, until it readily admitted two fingers. I then made a digital examination, and found the abscess to extend across the pelvis, behind the uterus and broad ligaments, to a point above the level of the fundus uteri on the left side, and to be filled with bands and projecting masses of granulation-tissue of about the consistency of freshly coagulated blood. Previous treatment, except to diminish and control the septicæmia,

had evidently been a complete failure. All of this medullary tissue was then scooped out with the finger and the cavity thoroughly cleansed with a two and a half per cent. solution of carbolic acid.

The highest temperature after the operation was 99° F., on the day following. Perfect drainage had been secured, for at the time of each dressing no pus was found inside of the abscess.

June 12th. Abscess-opening still an inch in diameter, without any apparent induration about its edges. Temperature normal. Patient allowed to get up. Expressed herself as feeling perfectly well.

June 16th. Took a buggy ride with benefit. Weight eighty-four pounds.

June 23d. A little pus found in the abscess at each dressing. Sphincter ani firm and contracted, causing some trouble by retaining pus, and interfering with irrigation. Attempted forcible dilatation with the aid of cocaine hydrochlorate, but failed to secure sufficient anæsthesia. Abscess-opening contracting.

June 25th. A. M., temperature 99 2-5° F.; P. M., 99 3–10.

June 28th. A. M., temperature 98 4–5. Not much discharge. Pain in iliac region and breasts, such as she formerly felt before menstruating. Abscess-opening almost closed by the uterus being drawn back over it. Would not consent to another operation.

June 29. An increase of discharge.

June 30. Dilated the abscess-opening with a large sponge tent, and washed it out thoroughly.

July 1. Temperature normal. Pains gone. Weight eighty-eight pounds.

She was now allowed to visit her relatives in Chesterton,

Indiana, where she came under the care of Dr. D. D. Marr. He continued the antiseptic irrigations, and used sponge tents as often as the opening contracted. He reported to me as follows:

"July 8th. Patient has gained two and a half pounds "in weight. Pulse 115.

"July 16. Gain of half a pound. Less discharge. A sup- "pository of iodoform is left in abscess after each dressing.

"July 28th. Patient much improved. Rode twenty miles "a few days ago in a buggy. Heavy deposits of phosphates in "the urine. A pocket of pus is giving trouble by filling and "discharging. Iodoform insufflations commenced.

"Aug. 12th. Abscess was closed up for a few days. This "was accompanied by night-sweats and pains, and was soon "followed by a copious discharge of fetid pus."

After consulting together we decided to allow a solid piece of sulphate of copper to dissolve in the abscess-cavity.

Aug. 20th. The doctor writes: "Owing to an epidemic in "a little village near here I have been very busy and put off "reporting Mrs. T's condition. I placed a piece of sulphate "of copper, weighing a dram and a half, in the abscess (well "up), which had a most wonderful and I hope happy effect. "* * * The opening of the abscess, previous to the using "of the sulphate, was contracted, thickened and indurated, so "that it was quite difficult to introduce a finger, but after the "use of the remedy the induration and thickening disappeared, "so that two fingers can be inserted, and the opening seems "thin and quite dilatable. I believe this action has extended "over the whole abscess wall, with the exfoliation of the pyo- "genic membrane, which came away in shreds and patches "(much to my surprise). The only inconvenience was that "there was somewhat of a seeping of the sulphate into the

"rectum, which resulted in some irritation. Mrs. T. is im-
"proving, and feeling stronger and greatly encouraged."

The abscess healed rapidly after this. Her pulse became normal, and her appetite unusually keen. By the first of September, two weeks after the cauterization, she had gained thirteen pounds, declared herself to be as well and strong as ever in her life, and was visiting all over the town in almost childish enjoyment of her regained health and vigor. A shallow depression was all that was left of the abscess. The menstrual flow had not shown itself since the commencement of her illness.

Early in September she was attacked with the then prevalent epidemic, dysentery, and died on the 23rd instant.

At the post-mortem examination, made about thirty hours after death, I was somewhat hampered on account of a promise, exacted by the husband, that no organ should be taken out of the body, and by the fact that I had but thirty minutes for work before train-time. The body had again become extremely emaciated. Abdomen was flat. An incision was made from a little above the umbilicus to the pubic bone. The pelvis was filled posteriorly with a solid mass of plastic tissue, which had drawn the uterus backwards to within about half an inch of the sacrum, so as to put the anterior vaginal wall upon the stretch, and had buried the uterus and other pelvic organs in its substance. Both round ligaments were seen issuing from this mass. It was necessary to cut down about half an inch before reaching the depressed uterus, and to tear through solid tissue behind it to arrive at the rectum below. The finger broke through into the rectum, behind the dimpled cicatrix that marked the site of the former outlet of the abscess. The left broad ligament was then felt to be represented by, or inclosed in, a tough band half an inch thick

antero-posteriorly, extending from the uterus to the left side of the pelvis. The left ovary could not be found. A small flat piece of what seemed to be ovarian tissue was found adhered to the bladder on the right side. The right broad ligament was apparently disorganized and inseparable from the plastic deposit. The rectum was held inflated at the point where it issued from the pelvis, was dark colored and injected on its external surface, and blackish and softened on the internal. Neither the appearance nor the odor of an abscess could anywhere be discovered.

Allow me in this connection to quote the following extracts from a letter, written to me by Dr. Marr on the twenty-eighth day of the same month:

"Yours of the 26th is at hand. * * * Owing to the "hurried examination, I extended it somewhat after you left, "with the result of fully confirming your views of the uterus "and its appendages. * * * I extended the examination "to the alimentary canal, and found the conditions peculiar to "that disease (epidemic dysentery) extending over the whole "of the large intestine and a part of the smaller, with intense "congestion of the stomach and peritoneum. The mucous "membrane of the larger bowel was very dark, ulcerated "and sloughy, the inflammation extending to the muscular "coat."

There seem to have been two hinges, as it were, upon which the treatment of this abscess turned: First, the operation per rectum; second, the cauterization by sulphate of copper. Both secured a large opening at the lowest portion of the pyogenic cavity, and brought away the unhealthy granulation-tissue. Had the patient consented to have the unobstructed outflow of the pus maintained by one or two subsequent dilations, similar to the first one, the cure would undoubtedly have been more rapid. As it was, the contracting sphincter

and abscess outlet rendered the drainage and irrigation imperfect. Progress toward recovery was, however, again inaugurated upon the melting away, by the sulphate of copper, of the newly and imperfectly formed cicatricial tissue, reproducing the opening made at the time of the operation; and by the destruction of the degenerative deposits, and cauterization of the chronic pyogenic surface. The only kind of treatment preferable to this free drainage and clearing out method, is the strictly antiseptic, which, after the pus has once found a way into the rectum, can only be accomplished by first closing this septic inlet.

The treatment by a counter opening in the vagina is much less preferable, because a recto-vaginal fistula, difficult of cure, and liable, like anal fistula, to inoculate the system with tuberculosis, would be left.

The treatment by abdominal incision cannot for a moment be entertained, for at least two reasons:

1st. It is necessarily followed by a recto-abdominal fistula of great length, which is incapable of being promptly cured, and is apt to become an unfailing source of systemic infection. Those patients already operated upon, as far as reported, have usually either died shortly, or within a year or two, imperfectly cured. They would have, on an average, lived about as long without the operation. In fact, it is not impossible that one such, whom I had, previous to the operation, an opportunity of watching for a short time, would finally have recovered through the process of nature. To operate as does Lawson Tait, before the abscess has discharged, and then treat it antiseptically through its single opening, is an entirely different matter.

2nd. The danger of an abdominal incision should never be incurred without a prospect of compensation in the way of

bettering the patient's chances of recovery. Neither theory nor practice as yet proves such compensation to be attainable.

In some cases one dilatation per rectum, without after-treatment, has sufficed for a cure; in other cases two or more, with subsequent antiseptic irrigations, have become necessary. But as a general rule it may be said that, unless instituted too late, the procedure is safe and the recovery sure.

3100 Forest Avenue.

EDITORIAL.

THE AMERICAN PUBLIC HEALTH ASSOCIATION has become one of the permanent institutions of the country. Its inception dates back only a dozen years, but in that short time it has collected and published in its annual volumes a large amount of practical and most valuable information upon all subjects connected with public health. It is not a medical society, nor is it a society of sanitary engineers, nor is it made up of health-officers. In fact it is an association where any one, who takes an interest in the problems affecting the physical well-being of society, may meet and attempt, at least, to solve these problems. No pathy, no creed, no code, no sex, no nationality excludes any one from membership or office. It attempts to do for the American people what health-congresses and similar national organizations are trying to do for the peoples of the old world. Such measures and such studies on the part of the non-professional public are peculiar to this last half of this nineteenth century. In former generations it was fashionable to despise the body and look only after the

welfare of the soul. It is true, there was an old maxim that "cleanliness is next to godliness", but it was accepted as a figurative statement, or as articles in the Confession of Faith —doctrinal, not practical. It is a sign of better things, for the body at least, that from all parts of the United States and from Canada, such a large number of persons could think it worth while to visit Washington at the last annual meeting of the Association, and spend four days in the discussion of these great health-questions. We note with pleasure that the next meeting will be held in Toronto, Canada.

IN the December number of the JOURNAL AND EXAMINER a detailed account was given of preliminaries to the organization of *The Ninth International Medical Congress*, ending with the election, by the *Executive Committee* of the congress, of six additional members as authorized by the rules adopted for the government of the congress.

It appears that after the six newly-elected members had been officially notified of their election, a meeting was called, in Philadelphia, to confer as to the advisability of all or any of the newly-elected members accepting the positions to which they had been elected. The result of that meeting has been announced, in various journals of the country, in the following terms :

THE INTERNATIONAL MEDICAL CONGRESS OF 1887.—A meeting of members of the medical profession interested in the International Medical Congress in 1887, to which prominent medical men from a number of cities were invited, was held at the hall of the College of Physicians, Philadelphia, December 4, 1885, Dr. D. Hayes Agnew in the chair.

It was stated that official notice had been given of the election, as members of the present Executive Committee of the congress, of Dr. J. S. Billings, United States army, and Dr. J.

M. Browne, United States navy; Dr. Christopher Johnston, of Baltimore; Dr. George J. Englemann, of St. Louis; and Dr. J. M. Da Costa and Dr. William Pepper, of Philadelphia.

A general and strong expression of opinion was made in support of the American Medical Association and its Code of Medical Ethics, and sincere regret was expressed that hasty action on the part of the association, and the introduction of false issues, had imperilled the success of the congress. It was made entirely evident, however, that the acceptance of the above elections would not be regarded as affording any adequate guarantee for the future scientific conduct of the congress, and, consequently, would not be followed by any co-operation on the part of the leading members of the profession now unwilling to join in that work. As an evidence of the earnest desire which is felt for the restoration of harmony upon this subject, and for the reorganization of the congress on a basis which would command general support, and thus insure success, the view was unanimously expressed that if the present Executive Committee should unite with them the Original Enlarged General Committee, and recommence the organization *de novo*, this course would ensure the desired result.

The *Executive Committee* of the congress has seemed to manifest a desire to have the congress organized as a truly representative body, and has taken such steps to secure the co-operation of many prominent members of the medical profession in the United States who are not in the preliminary organization of the congress, as could properly be done, under the rules adopted by the Committee of Arrangements, before it transferred the affairs of the congress to the *Executive Committee*, and that *Committee* accepted the duties of that office subject to those rules. Of these Rule 10 limits the number of the *Executive Committee* to thirty members.

As the committee which presented the invitation at Copenhagen numbered eight, and to this was added the "General

Committee," which numbered twenty-eight, making thirty-six, that number alone would exceed by six members the number authorized as the limit of the *Executive Committee*, exclusive of any members of the Executive Committee. It appears that since that meeting in Philadelphia all six of the newly-elected members declined to accept the positions to which they had been elected, and it is understood that in so doing at least some of the six expressed a willingness to accept if the conditions proposed at the Philadelphia meeting should be accepted by the *Executive Committee*, conditions which, it would seem, are impracticable, if the rules adopted for the government of the congress are to be enforced, in which case it must be inferred that those six gentlemen and their friends, whom the *Executive Committee* appears to have desired to have co-operate, decline to do so, except on conditions which it is not in the power of the *Executive Committee* to accept, because of the existing rules, adopted before the *Executive Committee* came into existence, and which the *Executive Committee* has no authority to change.

It would seem as if that *Committee* had shown a just comprehension of its duties, in the trust confided to it, in electing those six gentlemen to official positions, and in leaving vacant the presidencies of three important sections, and, in addition, nearly all of the other most important offices in the various sections of the congress, which were not already filled, when the Executive Committee was appointed, by the *Committee of Arrangements*. It thus gave to those six gentlemen an opportunity to participate in filling those positions with such officers as might be deemed best qualified for them. It may be said that there was no necessity on the part of the Executive Committee of tendering these positions to those six gentlemen; but evidently the Committee

considered that it was the right thing for it to do, and having done it there are those who inquire what could have been the motive which prompted them to decline to accept their election, except upon a condition which they must have known would be in direct conflict with the rules already adopted for the government of the congress, according to the precedent set by each preceding congress.

Would it not have been better for the gentlemen themselves, and for the cause of humanity and of science, that personal preferences should have been subordinated, and that they should have met the Executive Committee in the same spirit in which the tender was made, in order to contribute to the success of so important an occasion, where good faith, professional pride and patriotism combine to make it the duty of the whole profession of our country to unite in a determined effort to make the next congress what it ought to be?

Since the well-known character of those six gentlemen precludes any other idea than that they earnestly desire that the congress shall be an eminent success, from every point of view, let us hope that further consideration will result in such modification of their action that they will not impose impracticable conditions when the *Executive Committee* shows a disposition to go as far to meet their wishes as its sense of duty and of honor will permit, in acting under the trust it has accepted.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Stated meeting December, 1885. The President, C. T. PARKES, M. D., in the chair.

A CASE OF EXPULSION OF A LARGE SUB-MUCOUS FIBROUS TUMOR OF THE UTERUS, PER VIAS NATURALES, OR COLPO-MYOMOTOMY, was the title of a paper read by Professor J. H. ETHERIDGE. Mrs. A. B., aged 43 years, married 28 years, mother of three children, suffered from monorrhagia for six years past. She has had frightful hæmorrhages, but otherwise she has been healthy. In 1882, the first examination he was permitted to make disclosed a large sub-mucous, fibrous, uterine tumor, at the top of the fundus uteri, extending one inch above the umbilicus, its lateral diameter equaling its longitudinal diameter. A uterine sound was introduced eleven inches. There was no rectal or vesical disturbance. The only inconveniences experienced were the hæmorrhages and a "high stomach." The hæmorrhages have repeatedly brought her to death's door, but her recuperative powers were astonishing. Professor Etheridge then detailed her history for two years, during which time she had had several hæmorrhages, which were controlled by sponge-tents, rest and ergot. He detailed also the treatment by a homœpathic physician, which had consisted of incisions into the cervix uteri, and the administration of sulphuric acid and fluid extract of hydrastis canadensis, the latter remedy being extolled as a sure cure for uterine fibroids. On November 12, 1884, Professor Etheridge was called to see

the patient, whom he found in a pitiable condition. She was exsanguinated, feverish and dyspeptic. She was placed on tonic treatment and rapidly convalesced. In October, 1885, she had another hæmorrhage, which lasted twenty-four hours, before a sponge tent was introduced. This tent was speedily forced out. Three more sponge-tents were subsequently introduced, and an enema of ninety minims of fluid extract of ergot was given. Powerful uterine contractions ensued; the capsule of the tumor was ruptured, and the hæmorrhage ceased. Three days after that one pound of the tumor was pulled and cut away. The tumor was pultaceous, friable and accompanied by a disgusting odor. On the day following, one-half of a pound of the tumor was taken away, and two days later as much more. Three days later the patient was put under the influence of ether, and Professor Etheridge attempted to remove the remainder of the tumor, bnt only succeeded in removing two pounds more. After this operation, the patient went into collapse and nearly died. However, she recuperated so rapidly that in five days thereafter he removed another pound of the tumor. Five days later he succeeded in getting away another pound and the pedicle. The uterus, during the ten days past, had decreased rapidly in size, and the fetid vaginal discharge had lessened. During the three weeks in which the six pounds of gangrenous mass were removed, he expected the patient would develop sepsis, but none occurred. As the patient was continually under the influence of ergot, and shreds of the tumor came away between the times of the operations, it is safe to estimate the weight of the tumor at thirteen pounds. The points of interest in the case were that the hæmorrhages recurred most severly in the autumn, which was probably due o the changes in the circulation incident to the occurrence of

cold weather; and also that, in order to remove these tumors expeditiously, it is imperative that we should be enabled to draw the tumor down into the vagina, where it can be grasped, and, at the same time, to continuously contract the uterus behind the descending tumor so as to facilitate traction and to avoid hæmorrhage.

THE PRESIDENT remarked that this case teaches the lesson of the importance of early interference in fibrous tumors of the uterus, especially those that are large and accompanied by hæmorrhages, which facts indicate that they are close to the mucous membrane, and under the effect of the contraction of the muscular fibres of the uterus, and thus susceptible to the influence of ergot.

DR. JACOB FRANKS then detailed A CASE OF VESICAL CALCULUS, in which lithotrity was attempted. A Bigelow lithotrite was introduced, which grasped a stone measuring two inches. Upon turning the screw the instrument broke, and in consequence of the accident a portion of the instrument was left in the bladder. On the next day the lateral operation of lithotomy was performed, and the calculus and the broken piece of the instrument removed. The patient made a good covery.

The Sociey then adjourned.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, December 7th, 1885. THE PRESIDENT, C. T. PARKES, M. D., in the Chair.

Pneumonic Abscess was the title of a paper by Dr. Edward F. Wells, of Minster, Ohio. He incorporated in his paper the histories of a number of cases which recovered under expectant and medical treatment. In an experience with 413 cases of

pneumonia, abscesses occurred nine times. In closing his paper, the author said that he had arrived at the following conclusions:

1. The issue of pneumonic fever in abscess is rare, but this rarity has been greatly overestimated.

2. These abscesses vary much in size and are most frequently found at the base of the lung.

3. They may in some instances, after pneumonia, be caused by excessive jarring or other motion.

4. They are usually formed rapidly.

5. In some rare instances the purulent contents may degenerate into a cheesy mass, to again soften, liquefy and be discharged.

6. The symptoms and signs are quite distinctive and sufficient for an accurate diagnosis.

7. The majority of cases recover, but in a certain proportion a cure is impossible.

8. Expectant and medical treatment, thus far, has given the best results, and the majority of cases should be managed upon this plan, but, under certain conditions, the most radical measures for relief are not only justifiable but imperatively demanded.

PROFESSOR CHRISTIAN FENGER said that an interesting point in the paper is that the author takes the ground of the clinical and, perhaps, conservative man. Dr. Wells claims that we should not operate on the small abscesses, but only on large ones, as the latter are the more dangerous. Professor Fenger believed that we should operate on all of them when indicated. Buhl, in Christiania, has operated on nineteen cases in which there were cavities. Up to the present time, we have reports of about thirty cases in which operations have been performed, but only seven of these cases have been such as reported by

Dr. Wells, or abscesses incident to pneumonia. Since there have been only seven cases of abscesses of the lungs, incident to pneumonia, it stands to reason that these cases were severe ones, and that the abscesses were large. Professor Fenger did not believe there had been much operating on small abscesses as yet; however, he would advocate it in case these abscesses were accompanied by a fetid bronchitis. There is an abscess-cavity, which Rokitansky calls a chronic abscess, in which there is not connective tissue enough to allow the cavity to close. The cavity is a source of danger to the patient, as sometimes, for one reason or orther, septic micrococci gain entrance, acute inflammation or gangrene follows, and the patient dies. In such a condition, we should try to obliterate the cavity. Operative treatment of these abscesses has been so infrequent that we cannot say that it possesses any advantage over medical treatment. The important point to be decided in the future is how to get an understanding of where the danger-line is; how long we can afford to wait and how much strength can we afford to let the patient lose before we operate? It is, perhaps, well to put in a word of warning against operating too early, as we are all aware that patients who recover without an operation do better than those on whom there have been operations. Professor Fenger said that, in case a cavity gives rise to fetid breath, frequently a fetid bronchitis is developed, and subsequently an inter-lobular pneumonia in the other lung, or in the upper part of the lung in which the abscess exists. Relative to Dr. Well's remark that he never suppresses the cough, Professor Fenger stated that it is a fact that the cough ceases almost instantly after the abscess is opened.

DR. R. TILLEY said that he could not see of what benefit inhalations of turpentine could be in such cases, as the abscesses are analogous to those which occur in the most external

portions of the body, and we never expect to benefit them by using turpentine. He would expect better results from administering this medicine internally, as he had, recently, read that the German physicians are using turpentine very successfully, by giving it internally, in diphtheria.

DR. WELLS, in closing the discussion, said that he wished to recall the attention of those present to the important point that these abscesses occur most frequently in the lower lobe of the lung, similarly to pneumonia. The principal object of his paper was to do what he could to counteract the tendency among the medical journals to advise early operation in pulmonary abscesses. He thought the statistics, so far, do not prove the operative treatment to be superior to the expectant and medical treatment, and he thought surgeons were too prone to take the cases into their own hands, and that they do not leave enough to the *vis medicatrix naturæ*.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, 27th November, 1885. THE PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

I. BARTLETT. *Remarks on the Toxic Properties of Sassafras.*

II. EARLE. *Remarks upon a Teratom, and a Case of Artificial Abortion*, with presentation of specimens.

I. DR. JOHN BARTLETT read a paper entitled,

REMARKS ON THE TOXIC PROPERTIES OF SASSAFRAS, from which it was apparent that the oil of sassafras exerts a decidedly toxic influence, although many standard works, consulted by DR. BARTLETT, make no allusion to any such quality in sassafras. DR. BARTLETT also cited instances in which "Sassafras-tea" had been used for its oxytocic and ecbolic effects.

He said his remarks had been largely based on a report made by DR. HILL, of Baltimore, of his observations and his experiments in the use of oil of sassafras, and he concluded his remarks by saying that "A study of the toxic effects of sassafras as reported by DR. HILL, and here suggested, would seem to show a triple resemblance to three familiar articles, opium, strychnine and ergot.

"In its action as a narcotic and sudorific it resembles opium.

"In its property of inducing tetanic and clonic spasms, followed by paralysis, it is similar to strychnine.

"In its power hinted at of exciting the uterus, it may be likened to ergot.

"It may be of interest here to call attention to the fact that the first reference to the use of ergot as an ecbolic was made by Stearns in 1807, whereas it had been used by midwives certainly as early as 1688, and probably very much earlier."

PROFESSOR JAMES H. ETHERIDGE referred to the action of the oil of sassafras on the motor centres in the spinal cord, supplying the uterus.

DR. EDWARD WARREN SAWYER said in New England, sassafras was a popular emmenagogue. Mothers were in the habit of giving decoctions of sassafras and tansy to their daughters in case of delayed or suppressed menstruation. Many of the essential oils produced the effects ascribed to sassafras by DR. BARTLETT. In the South, oil of sassafras was a popular remedy for uterine disease.

THE PRESIDENT inquired as to the chemical constitution of the volatile oils?

DR. H. P. MERRIMAN replied that many of the volatile oils were identical in chemical relations, but differed in physical properties. Such oils were *isomerides*. The essential oil of lemons, of bergamot, neroli, lavender, pepper, camomile, caraway, clover, etc., are isomerides of the oil of turpentine.

Oil of sassafras was an isomeride; whether or no of the turpentine group, he could not say. Oil of turpentine was a hydrocarbon, possessing the formula C_{10} H_{16}.

DR. H. T. BYFORD was of the opinion that the oil of sassafras exerted its influence locally upon the alimentary canal and pelvic viscera, through which it was excreted, rather than upon the uterine nervous centres, as in the case of ergot. This would account for its popularity as an emmenagogue, mentioned by Dr. Sawyer. He had recently given one drop, combined with one-half grain of piperin, every three hours, for two weeks, in case of typhoid diarrhœa. Slight strangury, disappearing with the discontinuance of the drugs, was produced.

II. DR. CHARLES WARRINGTON EARLE presented for DR. JOSEPH HAVEN

A TERATOM, corresponding in development to the third month, and bearing an asserted resemblance to a pup.

The following history was read :

DR. HAVEN had attended the family of Mrs. H. for the past four years. During this time he had had occasion to notice that the younger daughter was a person unusually strong in her likes and dislikes, of a nervous temperament, slight build, yet a sensible, educated, and attractive girl.

On the eighth of September, 1885, this young lady, in company with her sister, called at his office to consult him with reference to her condition. He made the following entry in his case-book, as the result of her visit :

" Mrs. D., nineteen years old, married one and one-half years, always regular as to her courses up to July 21st, since then no show. Physical signs point to pregnancy in the sixth week."

A few days later he saw her again. She was nervous and

higly excited—almost hysterical. She told him in an excited manner that a dog had jumped on her, and that she "hated dogs." She complained of pain in the abdomen, low down.

From that day until the 1st of November, Dr. Haven saw her several times. Each time she was threatened with miscarriage, and each time she declared she was positive she could never carry that child. Her husband and sister told him that, asleep or awake, her mind seemed to dwell continually upon that dog. That she daily wondered if the child would be marked. Mr. D. said that ever since he has known her she has been afraid of dogs ; she would always cross the street rather than meet one, and he has often jokingly refused to take her out with him, telling her, as an excuse, that they might see a dog, and she would make a scene.

On the night of November 1st, the husband roused DR. HAVEN, desiring him to go over and see his wife, thinking it to be only a repetition of former attacks. An examination proved that Mrs. D. was about to lose the contents of the uterus. She was flowing constantly. The os had dilated slightly and DR. HAVEN could just reach the presenting part. The history of the miscarriage was the usual one, and the result is seen in the specimen presented.

She insisted on seeing the fœtus, and declared it to be the image of the dog that had frightened her.

A general discussion upon the subject of maternal impressions followed.

III. PROFESSOR CHARLES WARRINGTON EARLE presented specimens from a case of artificial abortion. The fœtus corresponded in development to the fourth month of pregnancy, and was not decomposed. It was closely enveloped in the membranes, and entire absence of the *liquor amnii* was noticed.

Hæmorrhage into the placenta and decidua was not observed.

The following history of the case was read:

Mrs. F., American, has given birth to five children, the youngest twenty months old; labors always normal; has a history of anæmia for some months', if not years', standing; last menstruation ended May 20th, '85; in June, had a very slight discharge of blood; during the weeks following she would occasionally lose a small amount of blood, at other times there would be profuse hæmorrhage lasting twenty-four hours. She had at one time a white, sticky discharge, something like the albumen of an egg. Oct. 1st, began to flow constantly with some pain in back and sides, particularly the left. Was seen by PROFESSOR ST. JOHN, Oct. 12th, at which time he administered the usual styptics with rest. She continued to flow, with pain, for another week, when hæmorrhage was so severe and prostration so pronouneed, and with the suspicion of *placenta prævia* it was decided that temporizing means should cease. After consulting with PROFESSOR EARLE, it was decided to induce labour. A catheter was introduced and allowed to remain twenty-four hours, when pains came on and patient was delivered Oct. 17th, '85. During the entire period of gestation the woman could not detect the usual signs of her former pregnancies. She made a good recovery and menstruated Nov. 20th. There had been no discharge of water perceptible to the lady during the entire period of pregnancy.

DISCUSSION.

PROFESSOR W. W. JAGGARD thought PROFESSOR EARLE's case was a typical example of the condition, technically termed *mummification*. The fœtus dies, and the fluid constituents of its body and envelopes are gradually resorbed. Mummification is usually observed in connection with twin pregnancies. One child is

usually perfectly developed, while the other is converted into a mummy-like object.

Maceration and *mummification* of the fœtus are observed when the membranes are intact; *putrefaction*, after rupture and entrance of air into the uterine cavity. Professor Earle's case was probably not an example of that rare condition, abnormally small amount of amniotic fluid. There were no abnormal amniotic foldings, nor the fœto-amniotic bands described by SIMONART.

.W .W. JAGGARD, M. D., *Editor.*

2330 Indiana Avenue.

THE CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

The Society convened on October 13th, 1885. F. C. HOTZ, M. D., in the chair. The Society listened to the following paper by DR. LYMAN WARE:

ON OSSIFICATION OF THE CHOROID.

Although calcareous formations within the eye are of frequent occurrence, osseous formations are not so common, but the following case may be instructive, both pathologically and clinically. For a long time all hardened deposits within the eye were considered calcareous and the formation of true bone was much doubted. Knapp collected and studied quite a number of cases of ossifications within the eye, which he published in the Archives of Ophthalmology and Otology, vol. II., p. 1–35.

At that time he considered the capillary layer of the choroid the origin of all intraocular ossification. Since then a number of cases have been reported,* in which they occurred in other structures. The formation of bone is usually preceded by

*Knapp's Archives of Ophthalmology, Volumes VI. and IX.

prolonged and frequently severe intraocular inflammation, and is generally of traumatic origin. The development of bone requires no antecedent conditions other than a vascularized connective tissue. The following is a brief history of a case that came under my observation:

Mr. G. D., farmer, aged twenty, American. When nine years of age he was struck accidentally in the right eye with the handle of a pocket-knife, which completely and instantly destroyed vision and caused severe inflammation in and about the eye, accompanied by great pain and much distension of the ball and surrounding tissues, continuing for several weeks. During the five or six subsequent years the injured eye caused little or no trouble. During the winter of 1875, when he was sixteen years of age, or seven years after the accident, as a result of severe exposure, the injured eye again became painful, at times better, at times worse. Pain usually subsided in a few days if the patient remained quiet in a darkened room and made frequent hot applications to the eye. In the winter of 1880, the left eye began to be sensitive to the light, particularly to artificial light or reflected light from snow.

The patient was first seen in July, 1880. The right or injured eye was somewhat atrophied; the tension was greatly diminished and the eye was slightly tender on pressure, although not markedly so. In the left eye there was photophobia, lachrymation, slightly sluggish pupil, and supra-orbital neuralgia.

Vision for distance tolerably good, V=15-xx; but it was quite impossible for him to read even Jaeger 11 for more than a minute or two, on account of the lachrymation and ciliary neuralgia which it induced.

Ophthalmoscopic examination showed well marked nueroretinitis. Immediate enucleation of the injured eye was

advised, but as it apparently gave him no little trouble, being only slightly painful at times, and as he was a farmer, he did not like the idea of wearing an artificial eye and submitting to all the inconveniences such an eye entails, he declined to submit to the operation and returned home. In the latter part of August, five or six weeks after his first visit, he returned to the city and was quite willing to submit to the enucleation of the injured eye as his symptoms had grown much worse after returning home. The tenderness, on pressure, of right eye was much increased, and the eye-ball was intensely injected. In the left eye there was considerable pain, supra-orbital neuralgia, sluggish pupil and photophobia V=10-xx.

August 20th, 1880. The patient was advised to remain quietly in a darkened room, and to take the following:

℞ Pulv. Dover..... 2.00
Quin. Sulph..... 3.00
Div. in parts, 20.
S. One every 4 hrs.

August 24th. The inflammatory symptoms were not so great. Ether was administered and the injured eye-ball removed, although with some difficulty, owing to its atrophied condition and some fibrous adhesions which completely surrounded it.

August 25th. Patient fully recovered from the effect of the ether, and the ciliary neuralgia less than it had been for months. Ordered Pil. Proto iodide Hyd. gr. ¼, one, three times daily.

September 10th. Wound nearly healed, neuralgia entirely absent. Vision much improved (15-xx) and patient allowed to return home, but advised to take the following alteration for six weeks or two months:

℞ Pot. Iodid..... 16.00
Cinch. T. R..... 20.00
Sarsar. Co. Tinc..... 14.00

S. A teaspoonful, three times daily in water, after meals.

December 4th, 1880. The patient returned to the city for an artificial eye. There had been no recurrence of neuralgia, and vision fully restored (7-xx). The eye was placed in Müller's fluid for several weeks, then absolute alcohol, and after three months it was partially divided in its equatorial diameter. The vitreous was liquified and immediately escaped, leaving the retina in the form of a cord, extending from the fundus or posterior portion of the ball to the anterior, where it expanded, funnel-like, and enclosed a calcarious lens. The ossification was situated in the choroid, its thickest portion corresponding with the entrance of the optic nerve. The eye-ball was somewhat atrophied, measuring a trifle over two centimeters in the antero-posterior diameter, and a little less than two centimeters in its equatorial axis. The ossification measured fifteen mm. in length concavo—convex—the concavity looking forward and from four to eight mm. in width. Measured from the optic disc, it was a few mm. longer on the outer than on the inner side; its greatest thickness, which was at the optic disc, was two mm. The posterior of convex surface of the bone was well marked with choroidal pigment. Five years have now elapsed since the enucleation, and no relapse has occurred in the eye sympathetically affected.

The points of special interest in the case are the slight tenderness in the eye, primarily affected; the rapid and complete recovery and restoration of perfect vision after the injured eye had been removed. The question arises, if in cases of sympathetic ophthalmia, neuro-retinitis is the predominant symptom, is not the prognosis more favorable than when the cyclitis

predominates? Which nerves are principally concerned in the former and which in the latter?

The case is certainly confirmatory of the conclusion arrived at by Knapp (Archives of Ophthalmology and Otology, Vol. II., p. 34), that "the diseases which lead to ossific productions are chronic inflammations of the interior coats of the eye called internal ophthalmia by the earlier, irido-choroiditis by modern, writers."

Dr. F. C. Hotz then read a paper entitled: *A case of Choroiditis following Typhoid fever.* He called attention to the fact that text-books record as sequelæ of this fever only corneal ulcers and abscesses, disturbances in the muscular apparatus, as paresis of accommodation and sphincter pupillæ, and paralysis of one or the other of the external muscles of the eyeball and affections of the optic nerve. Affections of the uveal tract are not even mentioned, this apparent immunity of the choroid to the effects of typhoid fever appears very remarkable if we consider the fact that other acute infectious diseases have been known at times to cause serious disturbances in this tunic. Cerebro-spinal-meningitis and relapsing fevers are known to cause respectively exudation into the vitreous, with subsequent atrophy of the globe and deposits on Descemet's membrane with posterior synechiæ (cyclitis and iritis). Similar changes may follow typhoid fever as was shown by the case cited.

Another interesting feature of the case was the rapid improvement which followed the hypodermic injections of pilocarpine.

A robust young farmer, aged sixteen, consulted Dr. Hotz on January 13th, with reference to diminished vision of the left eye. During recovery from an attack of typhoid fever, in October, he first noticed dimness of sight, which finally became

entirely obscured. No syphilitic taint. At the time of examination the following was noted: Right eye V = 20–XX. em, normal fundus. Left eye, counted fingers at twelve feet; there was no pain, tenderness or redness. Transparent media, with exception of vitreous, clear. Pupil slightly enlarged, a mydriatic had not been used. Tension normal. Numerous floating opacities in the vitreous allowing, however, examination of fundus and discovery of a large whitish exudation in the periphery of the upper nasal section.

The patient was given Pot. Iod. gr. V. three times per diem. He returned February 5th. While at home the eye inflamed (evidently iritis) during two weeks. The brown pigment, dots upon the anterior capsule of lens, outlining size of the pupil were the same as on first examination. The pupil was larger and vitreous, so cloudy that but a faint reflex could be obtained with ophthalmoscope. He could barely count fingers at one foot. The patient was put under a treatment of hypodermic injections of gr. 1–6 of pilocarpine. After five injections, administered in one week, the vitreous was much clearer. V. had risen to 20–L, but patient felt so weakened from effects of remedy that he insisted on a short intermission. During this time sight grew worse and sank in one week to 20–C:

Descemet's membrane became dusty and vitreous cloudy again.

Pilocarpine treatment raised V. to 20–L; vitreous cleared up, ophthalmoscope showed a number of disseminated white patches in upper nasal section of choroid. From this time on the eye improved constantly. March 28th, very few opacities in vitreous, V = 20–XXX. May 21st, V = 20–XX, vitreous clear. In the upper nasal periphery of fundus numerous patches of choroidal atrophy.

COLLEGE OF PHYSICIANS, OF PHILADELPHIA.

Stated meeting, October 7.

Cocaine in Hay-Fever.—A report on the influence of cocaine in cases of rose-cold and hay-fever was read by Dr. J. M. Da Costa, supplementing the writer's claims in his former paper of last year. The success which has attended this method of treatment, in his own experience and that of others, induces him to recommend it highly for all ordinary cases.

Solutions of less than four per cent. are insufficient, and some cases require eight. per cent. of the salt to produce noticeable improvement. The liquid may be thrown into the nostrils in the form of spray, but better results are obtained when five to eight drops are instilled with a medicine-dropper.

The distressing sneezing and the subsequent asthmatic attacks of hay-fever are prevented, entirely, by this means in some cases. Bronchial catarrh is not much benefited.

A certain insusceptibility—in the author's experience—or a varying susceptibility, is seen in the local use of cocaine. It is to be observed that some patients fail to receive benefit from its application.

A single case is mentioned in which increased vascular tension and severe headache followed its use in four per cent. solution.

Its mode of action in hay-fever is partly by the local insensibility it produces, partly by the contraction of the capillaries it induces.

That it is a radical, and, strictly-speaking, curative remedy, cannot be maintained, but it has been fairly tested and proven to give great comfort, and to convert very bad cases into light ones. In no case of rose-cold or hay-fever ought cocaine to

be left untried. It will be found that many who employ it will be able to remain at their homes, who otherwise would be obliged to flee to hay-fever resorts.

In the discussion of this paper Dr. Harrison Allen confirmed the statement of the writer, that the effect of cocaine is inconstant, within a narrow range, in different individuals. In endeavoring to account for this, he advanced the theory that a difference in the erectile tissue in the nostrils may be the real cause. Those persons in whom the tissue is sparsely developed may be less susceptible to impression by the remedy than those in whom it is well developed.

Examples were cited in which the nasal membranes were quite insensitive to any treatment, such as galvanism, which ordinarily constricts the capillary network. These are the cases which fail to respond to cocaine. A majority of cases are relieved by it, however.

Dr. H. C. Wood called attention to the observations of Dr. Lyons, of Detroit, wherein it was shown that there are two or three alkaloids in coca-leaf, and that commercial cocaine not rarely is composed of more than one alkaloid. Ecgonine and perhaps one other alkaloid are present at times.

The unexpected therapeutic results from the use of cocaine may possibly be due to the presence of one of these alkaloids.

In response to the question whether caffeine is an agent capable of being substituted for cocaine, as an anæsthetic, Dr. WOOD answered that he had made experiments with caffeine on the eyes of patients, and found it without effect.

Treatment of Sunstroke in the Pennsylvania Hospital.—A record of fifty cases of sunstroke treated at Pennsylvania Hospital was then read by Dr. Orville Horwitz, resident-physician of the institution.

The minimum temperature in any case was 112°, and this patient recovered.

Antipyrin, in large doses, was used in all cases of pyrexia, in conjunction with ice-bags and ice-sheets to the surface.

Musk was found efficacious in controlling convulsions.

Aqua Ammonia doubtless saved several cases where the patient was about to die of heart-failure.

Ether, hypodermically, acted as a better stimulant than whisky.

Blood-letting.—One individual was bled from the arm. He died two days after, from meningitis.

Four persons were cupped at the nape of the neck. They all recovered.

All these persons were full-blooded—heavy men, with injective conjunctiva; the veins were promineut in the neck, and there was full, bounding pulse, with convulsions setting in early.

Dry cups, true sunstroke, were valueless but in heat—exhaustion, the benefit was well marked.

Digitalis acted as an excellent heart-stimulant.

Quinine, following the antipyrin, was of great benefit.

Calomel, qr. x, and bromide of sodium, qr. xxx, were given when consciousness had been restored.

Of these cases, *twenty-four* were cases of sunstroke, and *twenty-six* suffered from heat exhaustion.

Of the *twenty-four* cases of sunstroke, *nine died. Three died* within *ten minutes* after admission, and cannot fairly be said to have been subjected to treatment in the institution.

Four died within *six hours* after admission. *Two died forty-eight hours* after admission.

Of the nine that died, *four were hard drinkers; two were strictly temperate*, and *three drank in moderation.* Twenty-one

out of the twenty-four had violent convulsions; one had acute mania, lasting one hour and a half.

The maximum temperature was 112° F.; this patient recovered.

The minimum temperature was 94 2-5°; this was a case of heat exhaustion.

Twenty out of the twenty-four cases of sunstroke occurred between July 16 and July 26.

The largest number received on any one day was on Wednesday, July 22, when nine cases were admitted. The thermometer on that day stood at $93\frac{5}{10}$° F. in the shade; on the two previous days it rose to 100° F. in the shade.

But two opportunities for post-mortem examinations presented themselves. In one case, which resulted in death ten minutes after admission, the temperature being 109° F., congestion of the lungs and kidneys was found to exist, with slight injection of the arachnoid and pia mater. In the remaining case, the individual dying two days after admission, there were presented the usual evidences of commencing meningitis.

On examination of the blood, the corpuscles were found shriveled in a few cases, but in the majority the microscope revealed no change.

Albumen was present in the urine in all but two cases, and this condition continued for two or three days after convalescence.

Dr. C. H. Wood said: The use of musk, as detailed in the paper just read, is, I believe new. Antipyrin has, however, been used in one of the New York hospitals, and a paper written thereon by the resident physician.

There is one point which is worthy of consideration by hospital authorities. I have noticed myself, in experiments on

animals, that time is of the utmost importance in the treatment of sunstroke, and our clinical experience accords with this. If the moment the animal became unconscious, I reduced the temperature by cold, the animal invariably recovered; if, however, it was left for ten or twenty minutes, reduction of the temperature caused benefit, and usually return of conciousness, but there were almost always marked signs of an impaired nervous system, and in a large proportion of cases death from paralysis. In the New York Hospital, antipyrin was given to the ambulance surgeon, and thus the remedy could be administered at once. I myself think that in very hot weather the hospital ambulance should be provided, not only with antipyrin, but also with ice, and no time would be lost, the remedies being applied as the patient was being brought to the hospital. The patient could be half undressed and rubbed with ice, and antipyrin could be used hypodermically.

THE AMERICAN ACADEMY OF MEDICINE.

At the ninth annual session, held in New York City on November 28th and 29th, 1885, Dr. R. L. Sibbett, of Carlisle, Pa., read a paper on *The Study of Medicine as a Means of Education.* There are at present 87 "regular" medical colleges and 29 sectarian schools in the United States. In Canada 12 regular schools and none teaching sectarian medicine. Our colleges are too lax in their demands, both of matriculates and of candidates for graduation. A preliminary, thorough, academic course and systematic graded courses in medicine are earnestly recommended. Examinations by a State Medical Board of Examiners of applicants for license to practice, irrespective of the degrees they may hold, would be a very patent

means of increasing the average grade of medical knowledge.

Dr. C. McIntyre, of Easton, Pa., read a paper on *Medical Supervision of Student Life*. The present great demands upon the mental energies of the student are detrimental to his bodily health and development. His suggestions were to remedy this in a measure by a careful physical examination at the beginning of school-life, and by a systematic graded series of gymnastic exercises, under medical supervision, during student-life.

Dr. Henry O. Marcy, of Boston, read a paper on *The Climatic Treatment of Disease*, with an illustration of western North Carolina as a health-resort.

The etiology of zymotic disease, based upon our knowledge of the rôle of bacteria, was first considered. He reviewed the recent investigation by climatologists of the mountain health-resorts of Europe and America and their effects, and concluded that the careful adaptation of the climate to the individual must be sought with reference to the improvement of his resisting vital powers, enabling him to withstand his bacterial enemies rather than to escape them.

The mountains of western North Carolina were described as offering a suitable climate for a variety of diseases, the writer's deduction being based upon a personal acquaintance with this region.

At the

EVENING SESSION

The President, Dr. Albert L. Gihon, delivered the annual address, the subject chosen being *What is Medicine?*

The Academy of Medicine is not a society of specialists. Its only limitation to fellowship is that the candidate shall be "learned in medicine," and in all else that the term implies—

a substantial foundation of thorough academic training for the study of medicine. This is one reason of the slow growth of the Academy. A second lies in its necessary hostility to men and institutions that defy the principles of its constitution. A third lies in the indifference of those who claim to be its friends.

In answer to the question, "What is Medicine?" we will find that it is the most profound and ennobling study that can engage the intellect of man. It embraces all that relates to the existence of man; his place in nature; his origin, development and growth; his preservation and continuance. The prevention and cure of disease is but a part, and to be mastered all else pertaining to it must be studied and comprehended. Only a well educated mind can accomplish the task. The proper place of the physician is not recognized in society. He is put on a level with the barber, cook, or cabman, by those who patronize him. Army and navy officers are jealous of his standing among them, and desire to prevent his promotion.

The low state of the American profession, in point of culture, was referred to with regret, and its cause found in the notorious looseness of those mercenary colleges whose practices shame our educational system.

Society should demand that no ignoramus be allowed a diploma.

Where a drug-clerk kills one patient by his carelessness, he saves a hundred by recognizing errors in doctors' prescriptions.

The debasement of medical education to the capacity of the purchaser of a diploma, will react upon the honor and reputation of every member of the profession. It must not go on.

To change all this, reforms must take hold of existing methods, with the deliberate intention radically to alter them.

Preliminary education must be the starting point. By insisting upon this other improvements would be secured correlatively.

SECOND DAY.

A paper by Dr. T. J. Turner, of the U. S. Navy, on *Medical Evidence* was presented. He said, expert-testimony differs from that given by other witnesses in that "matters of opinion" as well as "matters of fact" are admissible. The boundary-line separating expert from ordinary testimony may, however, be a matter of dispute. A jury may accept anything as expert-testimony which it sees fit. As a matter of fact, the writer said, "It has been decided that a medical opinion may be received as evidence if it is based upon study without practice, or upon practice without study, and it has been ruled that it is not absolutely necessary that the expert should have either studied or practiced medicine. In the place of "expert-testimony" the writer preferred the term "opinion evidence." The question of the admissibility of such evidence was to be decided by professional skill, attainments, aptitude, education, experience and known opportunities for observation of the subject on which the expert-opinion is demanded.

Drs. R. J. Dunglison, of Philadelphia, and H. O. Marcy, of Boston, made their *Report on Laws Regulating the Practice of Medicine in the United States and Canada.*

Indiana and North Carolina are the only states in which new and better laws have been passed within the year.

The New York law of 1884 had done some good.

Massachusetts had no law of any value.

In Pennsylvania the law had stopped non-graduates from practice.

The Michigan law proved weak.

In Ohio it was better but more legislation was wanted.

Tennessee had no law.

Wisconsin had a new law.

Kentucky had a law requiring a diploma.

Dakota had established a Territorial Board-of-Health, which granted licenses.

Texas is without legislation on the subject.

In New Jersey the registration law is weak.

Nebraska has registration.

Iowa has no statutes on the subject.

Virginia has had for two years a law which works fairly well.

Maine has no law.

New Hampshire has weak ones.

In Maryland the same is true as in New Hampshire.

Much remains to be done before the proper legal restrictions shall have been placed upon the practice of medicine, in all parts of the country. Progress has been slow, but there is no reason to despair.

Dr. Benjamin Lee, of Philadelphia, read a paper on *Heath-Officers, Ancient and Modern.* In ancient Rome officers of the public health received high honors and emoluments, and Rome was a healthful city in those days.

Boards-of-health should be carefully chosen in reference to qualifications, not political but professional.

Physicians should compose such boards for the most part, but not wholly, for the addition of a man-of-affairs was necessary to make up for the well-known lack of business ability among physicians.

The municipal government should be represented upon the board-of-health to promote harmonious action.

Paid agents should be regularly employed by the board, and all the members thereof should receive some salary in order to secure efficient service.

Dr. Nelson read a paper on *Micro-organisms, and their Relation to Disease.* The natural history of these small organisms was now being studied, not merely with reference to pathogeny and prophylaxis of virulent diseases, but also as tending to throw light on such questions as "spontaneous generation," the causes of fermentation, and the deeper mysteries surrounding the origin and propagation of life. Bacteria, which are vegetable forms, are best classified as (1) bacilli, (2) micrococci. Their examination is difficult, and requires the best lenses and condensers. Even then their life-history must be followed out in order to differentiate one from another, they having nearly dentical forms at any single stage.

The theory of the causation of diseases of the infectious type, by bacteria, was gaining acceptation. In reference to some it was proven.

Dr. Nelson has investigated this subject both in Germany—under Koch—and in his own laboratory and speaks with some authority, therefore.

Dr. Cushing, of Boston, read a paper on *Observations Concerning the Relation of Bacteria to Certain Puerperal Inflammations.* The results of examinations of the bodies of women, who died in Vienna of puerperal fever, were here explained. Strepto-bacteria and strapleglo-coccus and in cases the bacillus pyogenes fœtibus were found. The strepto-coccus is not distinguishable from erysipelas bacilli, the cocci being in pairs and each pair forming a link.

In pelvic abscesses these organisms appear in the lungs and joints.

Puerperal inflammations resemble infected wounds, and treatment should be based upon this idea of the pathology.

Dr. R. S. Sutton, of Pittsburg, said that in abdominal surgery it was not germs from the air but from the fingers, instru-

ments, etc., which set up mischief. The best results had been attained without antiseptics, so far, and that chemical agents caused irritation to the peritoneum.

Dr. H. O. Marcy, of Boston, related a case wherein a child had a suppurating peritoneal cavity which contained streptococci. The pus was evacuated and the cavity washed out with a solution of corrosive sublimate, after which the case recovered.

Dr. Jackson read a paper on *Medical Licenses and Medical Honors.* The great increase in medical colleges was noted, and the fact alleged to show that more practitioners were now college-graduates than formerly. It was only in 1881 that the diploma became a license to practice, and this rendered competition inevitable among colleges for the patronage of those who wished to purchase the legal right to practice.

The following were read by title:

Dr. Kelly. *The Physician and his Patient.*

Dr. Bush. *The Physicians of Delaware in the Eighteenth Century.*

NEW YORK STATE MEDICAL ASSOCIATION.

At the second annual meeting of the NEW YORK STATE MEDICAL ASSOCIATION, in New York, on November 17th, 18th and 19th, the President, John P. Gray, in his address discussed the question of the *Power and the Right of the State to License Medical Practitioners*, and took the ground that as the state must necessarily recognize all "schools and systems" of medicine, legislative interference is not called for, either in the interest of medical science, or of the medical colleges.

Dr. Alfred L. Carroll, of Richmond County, delivered an address on *State Medicine.* State medicine includes medical jurisprudence, medical education and public hygiene. The latter is held by the public as the most important, yet the medical student receives little or no instruction in this branch, and the profession at large has a deplorable lack of knowledge upon this subject.

Dr. Henry Didama, of Onondaga County, said of *Tubercular Consumption—Is it Ever Inherited?* The speaker assumed the infectiousness of the disease and its dependence upon the presence of the bacillus tuberculosis. He reviewed the literature upon the subject, and described an epidemic of the disease among cattle in which young calves, and even fœtuses, were found affected. Similar instances of hereditary transmission have not been found in the human subject. His conclusions are that (1) in man tubercular consumption is not hereditary; (2) that there is no peculiar hereditary tendency; but (3) children of tuberculous parents, as well as those of other parents debilitated by disease, may be weak and may easily acquire tuberculosis. They are more likely to become affected if they live among tuberculous than if they live among non-tuberculous individuals. In the discussion Dr. Rochester, of Erie County, related a case in which he found tubercles and a cavity in the lungs of a child three weeks old. Its mother was healthy, but its father had died of tuberculosis before the child was born. The speaker believed tuberculosis may be hereditary.

Dr. Simeon Clark, of Niagara County, read a paper on *Psöitis and Peripsöitis.* After reviewing the pathology and differential diagnosis he related three cases.

Dr. Hyde, of Cortland County, said that acute abscesse were at first not connected with the vertebræ; that caries of the spine is secondary.

Dr. Charles Brown, Chemung County, read a paper on *Shock, and the Effects of its Injuries upon the Nervous System*, describing the different forms and manifestations of shock and the conditions modifying it.

Dr. Frank Hamilton, of New York City, read a short paper on *Railroad-Shock*. He recognized two varieties. The first manifests early symptoms and is true shock. The second presents no early symptoms; is not true shock; there is primarily no injury to the spinal cord, but the ligaments of the spine are injured. This results in inflammation, which, by extension, leads to meningitis and myelitis. He ascribes the cause of the injury to sudden pitching forward of the body and its immediate recoil, like the snapping of a whip-lash.

Dr. Edmund S. F. Arnold, of New York City, read a paper on *The Essential Nature of Shock*. He considers it due to an injury to the centers controlling nutrition and to the partial arrest of nutrition.

Dr. Charles F. MacDonald, of Cayuga County, reported a case of gun-shot wound of the head, followed by insanity. The patient had been wildly maniacal for weeks following the injury. It was proposed to trephine. On reaching the bone it was found already open. With a hypodermic needle a cyst was discovered and evacuated. On recovery from ether the patient was perfectly rational.

There was a *Discussion on Pneumonia*, under the following heads:

Question 1. Is acute pneumonia a primary local inflammatory disease, or is it an essential fever?

Dr. Didama said that there have been three views as to the pathology of this disease, viz.: (1) that hyperinosis (excess of fibrin in the blood) is its chief characteristic; (2) that congestion of the vessels of the lungs from exposure of the surface of the body to cold is the principal exciting cause—pneumonia being considered an ordinary inflammation; (3) that it is an "essential fever," having a local lesion as secondary.

Dr. Ross favored the supposition that pneumonia was a general not a local disease, because true croupous pneumonia could not be set up by artificially irritating the lung tissue. Besides, the prostration accompanying the disease was out of proportion to the tissue invaded, and, moreover, there is a selection of a particular point, the right lower tube, for the local manifestation as in other general fevers.

Question 2. What facts can be cited in support of the doctrine that acute lobar pneumonia depends on the presence of specific micro-organism?

Dr. Janeway gave a review of the investigations hitherto made on the micrococci (pneumococci) of the sputa from a pneumonic lung.

By inoculation these micrococci will give rise to pneumonia in rabbits or guinea-pigs. The usual mode of infection is by the respiratory tract.

Question 3. What conditions or circumstances incident to acute lobar pneumonia render the disease fatal?

Dr. Robb stated that pneumonia is more fatal to negroes than to whites and more to women than to men.

Involvement of the upper lobes adds greatly to the danger. Alcoholic habits in the individual diminish or destroy his chance of survival. Some epidemics are milder than others.

Among the symptoms indicating great prostration and probability of a fatal issue are a temperature of 105° and upward, prune-juice expectoration, active delirium or, still worse, a low muttering fever and subsultus.

Dr. Biggs stated that only 6 per cent. died in 600 cases of uncomplicated pneumonia. Unfavorable prognosis was given in the following classes of cases: (1.) Patients of bad habits, particularly drinking men; also old persons. Patients who in the height of the fever have to be transported (as to a hospital) are very likely to die from the effects of this moving. (2.) Cases in which other affections co-exist, *e. g.*, Bright's disease, valvular disease of the heart, or surgical operations. (3.) Cases complicated by abscess, purulent infection, pleurisy with effusion, peri-and endo-carditis. (4.) Cases of pneumonia affecting more than a single lobe. (5.) Cases of great intensity, such as are frequent in some epidemics.

Question 4. Are there any remedies known capable of arresting or shortening the course of pneumonia or conducing to a favorable termination?

Dr. Rochester stated that formerly he had used the lancet and calomel with as good results as any since obtained in his practice. Ammonium carbonate, in five to ten grain doses, given in milk, was also recommended. Veratrum and other cardiac or arterial sedatives were not approved, nor was alcohol, except in asthenic cases.

Question 5. Is blood-letting ever indicated, and, if so what circumstances are there indicating and contra-indicating its employment?

Dr. Clark believed bleeding would relieve certain plethoric cases in which there was cardiac exhaustion, and dilatation

of the right ventricle, and in which stimulants failed to secure improvement. Careful selection of the cases suitable for blood-letting was important.

Question 6. Is alcohol useful and what are the indications, doses, etc. ?

Dr. Shrady thought alcohol was over-rated in medicine. It has little effect upon the pyrexia. Old people need stimulants when attacked with pneumonia.

Dr. Ferguson said alcohol was doubtless a true food, although much overestimated by medical men who had only vague ideas of its action. Temporarily it increases the action of the heart yet it acts as a sedative.

Question 7. To what extent is it safe and useful to employ antipyretic measures in acute lobar pneumonia inclusive of the cold-bath, sponging the body, or the wet sheet ?

Dr. Stockton believed these measures, when found to be well borne by the patient, were valuable, but when seemingly ill-borne, were dangerous. Cold-sponging he considered to be the only safe measure. More than gr. xx of antipyrin should not be given in one dose, and this was not to be repeated until eight or ten hours had elapsed.

Question 8. Do relapses frequently occur after convalescence ?

Dr. Orton had not met with relapses, and he thought that those so-called were really due to the extension of the disease to new tissue. Bronchitis, carditis, nephritis, etc., were liable to appear as complications, but not often meningitis. Second attacks of pneumonia or pulmonary phthisis were not uncommon sequelæ.

Dr. Van Dewarker presented a paper on *The Medico-Legal Bearing of Pelvic Injuries in Women.*

In cases of actions involving these injuries the defense was at a disadvantage since it could not procure evidence of the real trouble, the court being averse to ordering an examination of the women. Many fraudulent cases were trumped up by women. The law should compel an examination to be made in these cases.

Dr. A. Flint, Jr., delivered an address entitled *Some of the Relations of Physiology to the Practice of Medicine.*

A strong plea for accurate physiological knowledge, rather than empiricism, as the basis of medicine was made. The study of cardiac diseases was used to illustrate this claim. The investigation of micro-organisms was pointed out as an illustration of the superior value of scientific physiology in helping practical medical knowledge.

Dr. Taylor read a paper on *Recto-Labial or Vulvar Fistulæ—Their Causes and Treatment.*

These affections originating in or about the glands of Bartholin are similar to the anal fistula. They arise from abscesses (1) in the glands, (2) the cellular tissue surrounding them, (3) the pre-rectal vulva.

Dr. Edward M. Moore read a paper on *Recurring Luxations.*

These he believed to be due to lacerations or weak spots in the capsular ligaments. Their occurrence in no way reflects on the surgeon.

Dr. Hyde read a paper on *The Difference in the Symptoms of Strangulated Oblique Inguinal Hernia*, giving a summary of the symptoms and indications for operation.

Dr. Gouley advocated early operations even if the diagnosis was obscure, believing that when no hernia was found the risk was slight.

Dr. Jamison read a paper on *Medicinal and Dietetic Thera-*

peutics of Chronic Intestinal Catarrh. Laxative remedies were recommended.

Dr. Garrish gave rectal injections of bismuth, but avoided oatmeal as a diet.

Dr. Purdy presented a paper entitled *A Cursory Review of the Epidemic and Endemic Diseases of Sullivan County, during the last Thirty-Four Years.* This was a very interesting sketch of the medical history of Sullivan County, New York, showing clearly the varying character of the different epidemics which had occurred, and the methods found most useful in controlling them.

Dr. Sabin described the *Removal of an Enterolith.* The stone was crushed and removed through the anus. Its weight was five ounces, and it was found to consist of petrified fæcal matter.

Dr. Van Zandt spoke of *Commercial Prescriptions.* It was noted that certain physicians had lent their names to advertise trade-preparations and this practice was severely condemned.

Dr. De Zanche read a paper upon *Prophylaxis,* urging upon physicians the need of inculcating hygienic principles, especially in the rural districts.

Dr. Baker declared the profession much too indifferent in these matters.

The following papers were read by title.

Dr. Alder. *Relation of Drink to Insanity.*

Dr. Tremaine. *Tumors of the Jaw.*

Dr. Bozeman. *Incontinence in Women from Hyperdilatation and Paralyzation of the Urethra.*

Dr. Leynde. *Skin-Flaps in Amputation and Umbilical Hæmorrhage in Infants.*

Dr. Fell presented a paper on *Some Etiological Factors in the Acne-form Diseases.* He attached much importance to the

well-known fact of the presence of parasites called *Acarus* or *Domodex* in the pustules, and directed his treatment to the destruction of these with great success.

Dr. Janeway read the *Address on Pathology*. The study of micro-organisms seemed about to revolutionize pathological knowledge. Many obscure questions were now awaiting study and solution by those who were investigating the germs of diseases, particularly as to the possibilities of inoculation with attenuated virus, as a means of prevention. To the German pathologists he gave the greatest credit for original research. This was owing to the encouragement and assistance given by the government to scientific studies. Young men were induced to pursue scientific studies by the hope of attaining professorships. Here young men not only could not afford the time to become expert in these delicate manipulations, but the necessary apparatus cost twice as much as abroad. At the request of several present Dr. Janeway gave his views on the use of oxygen-gas in pneumonia. It was of great value in his experience in the cyanotic stages and should be administered whenever blueness of the skin showed itself.

Dr. Seymour read a paper on *A Case of Gall-Stones, Patent and Concealed. Exploratory Laparotomy—Autopsy eight weeks later.* Rather than entire removal of the gall-bladder, he recommended opening it and evacuating the contents, as a result of his observations in the case detailed.

Dr. North read a paper on the *Therapy of the Chlorides; Antisepsis, A Prominent and Important Factor in their Medical Action.* This was an exposition of the germ-theory of all infectious diseases. The efficacy of all medicines was due to their power in destroying micro-organisms. He claimed this particularly in the case of mercury, chloride of iron, etc.

Dr. Peters claimed great success for his method of treating

diphtheria with bichloride of mercury gr. $\frac{1}{30}$ alternating with tincture of iron.

Dr. Newman read a paper on the *Causes of Failure in the Treatment of Urethral Stricture by Electrolysis.* Various causes of failure were alleged.

Dr. Meier praised the operation.

Dr. Manley agreed with the writer as to the difficulty of the operation.

Dr. Seymour read a paper on *The Diagnosis and Treatment of Pelvic Hæmatocele.* The diagnosis was stated to be obscure in the early stages but capable of being made, with certainty, later on.

When the hæmorrhage has been controlled, or has ceased spontaneously, absorption of the clot may occur, or it may soften and cause an abscess. Aspiration is recommended where a large collection exists.

The following papers were read by title:

Dr. Fitch. *Poisoning by two Grains of Strychnine.*

Dr. Rushmore. *Treatment of Abscess.*

Dr. Thayer. *Chronic Catarrhal Gastritis; Fatal from Sudden Enlargement of Thyroid Gland.*

Dr. Briggs. *Proper Disposition of Ashes, Swill, Etc.*

Dr. Leaning. *Ergot—Its Uses and Misuses.*

Dr. Stocton. *Nutrition in Lithæmia.*

Dr. Samuel W. Smith read a paper on *The History and Treatment of Thirty Cases of Diphtheria.* Of these cases five were fatal. The writer inclined to the theory that croup and diphtheria were one disease. His treatment consisted in the internal use of *Tr. Ferri. Mur.*, in glycerine, and potassa, chlorate, gargles of salt-water and spray of carbolized lime-water. Tracheotomy was not approved.

Dr. Hannan thought little was known of the real nature of this disease.

Dr. Harrison read a paper on *Peri-Uterine Hæmatoma.* The symptoms and cause of this form of trouble were carefully detailed.

Dr. Shrady read a report of a case of *Cancer of the Kidney.* Children have this disease more often than is known, the writer said. The diagnosis is plainer from the fact that enlargements of the spleen do not occur at that age. These growths form rapidly, displacing the other viscera and sometimes causing dyspnœa from pressure upon the diaphragm. Hæmaturia is often absent. The wandering of blue veins over the abdomen was noted as a symptom. Pain is usually present, sometimes constant but generally intermittent.

The following papers were read by title:

Dr. Manley. *Modern Aspect of Therapeutics.*

Dr. Hartmann. *The Vectisin Cross-Births, also Pessaries and their Uses.*

Dr. Gouley. *Contractures of the Bladder Consequent upon Cystitis.*

Dr. Sayre gave a demonstration of the method of applying a plaster-jacket.

Dr. Dennis spoke of *The Action of Micro-Organisms upon Surgical Wounds, with Demonstration.* Micro-organisms were classed as follows: (1) Sphero-bacteria; (2) Micro-bacteria; (3) Desmo-bacteria; (4) Spiro-bacteria; (5) Fungi.

COLLEGE OF PHYSICIANS, OF PHILADELPHIA.

Stated Meeting held November 4th, 1885.—The President, Dr. J. M. Da Costa, in the chair.

Three Cases of Removal of the Ovaries and Fallopian Tubes (Tait's Operation.) *By* W. W. Keen, M. D., *Professor of Surgery, Woman's Medical College of Pennsylvania.*

The following cases are put upon record as a contribution to an important operation, the usefulness of which is assured in certain cases, but the limitations of which have not yet been well defined:

CASE I. *Uterine Myoma; Excessive Hæmorrhage and Anæmia; Tait's Operation; Recovery and Cure.*—Mrs. L., of New Jersey, *æt.* 42; married at twenty-eight; two children—the last born ten years ago; each eleven pounds; normal labors; no miscarriages; absolutely well and strong till three years ago, when her periods became gradually more prolonged and profuse. Now she is unwell three weeks out of every four, and the flow is often so severe as to saturate a napkin every fifteen minutes, besides large clots of blood. She is thoroughly blanched, weak and anæmic.

November 25, 1881. Sent to me for consultation by Dr. Hollingshead. A tumor is visible in the hypogastrium the moment she lies down, and the abdomen is exposed; sound enters 6¼ inches. The tumor is an interstitial myoma in the posterior wall, as large as a large fist, moderately tender and painful; no vegetations on the endometrium; no erosion of os; cervix not involved; uterus moveable. Advised Squibb's extract of ergot (*m* xxx-xl), hypodermically, daily in the abdominal wall for a month; if not then better, advised Tait's operation, as all other means had been pre-

viously tried by her attending physician. She was unwell at the end of November, when the ergot was first used. It gave rise to great pain and considerable local inflammation, with nausea and vomiting, and had to be discontinued.

December. Again unwell; the intermenstrual period was freer from pain; but she was weaker and more blanched, and not able to come to the city; lost a large quantity of blood.

January 26, 1882. Came to the city; was so blanched that had she closed her eyes and folded her waxy hands she could have easily been mistaken for a corpse; weight one hundred pounds. Treatment: iron, quinine, milk-punch; food every two hours.

28th. Taken unwell; period lasted till February 2; used twenty-eight napkins, besides passing a number of large clots. Bad neuralgia of face: morphia (⅛ grain), hypodermically, failed to relieve, but water similarly given lessened it. Eats but little on account of pain.

February 3. Dr. R. P. Harris saw her with me, and concurred in advising the operation. Temp. 98.5°; pulse 80, feeble; heart normal, but weak; no change in uterus.

9th. Operation 12 M.; antiseptic method with carbolic acid, including the spray; bladder emptied. Duration of operation forty-five minutes. Ether (f℥vijss) used; incision four inches long in median line from pubes half way to umbilicus; no vessels tied.

On opening the abdomen a small amount of serum escaped. On account of the high position of the uterus the ovaries were readily found. Each pedicle was transfixed with a double carbolized silk ligature close to the uterus, the upper includ-

ing the Fallopian tube, and after ligature the tubes and ovaries were removed. The left ovary showed a recent corpus luteum; it had a few small cysts, and was cirrhosed in part. The right had one cyst two inches in diameter, and several smaller ones. The right tube was cystic just at the cervix-uteri; it contained a serous fluid. The veins were very large; no bleeding requiring a ligature occurred. The ligatures were all cut off short; four deep and two superficial sutures, the former, including the peritoneum, closed the wound. Dressed with carbolized gauze.

Immediately after the operation her pulse was 120, and feeble. Hot-water bottles were applied, and brandy was used, hypodermically, several times with good effect. She vomited only once up to 3.30 P. M., when her pulse was 93; temp. 97.2°; very small quantity of food and stimulant every twenty minutes. 7 P. M., pulse, 100; temp. 99.6°; has had some pain; feels stronger. 11 P. M., temp. 100.8°.

10th. Slept but little, but is comforable; temp. 100°.

11th. Temp. 98.4°; considerable pain in the back at 9 P. M., last night, followed by a bloody vaginal discharge. In twenty-four hours has used sixteen napkins, moderately saturated. Water at 105°–110° ordered, which gave great relief.

12th. Has used twelve napkins; temp. 98.8°.

13th. Slept excellently; discharge has ceased; dressing changed (fourth day). It was barely soiled, with very slight oozing from the operation; no pus; wound free from blush; union by first intention throughout; meat allowed.

15th. Several enemata having had no effect, as she felt uncomfortable, the rectum was emptied, mechanically, of a large amount of impacted scybala.

19th. Redressed; wound healed; sutures removed.

22nd. Sat up.

25th. The menstrual period was due on the 24th. Has used two napkins to date; less than f℥ss blood on each.

March 17. Went home; weight 110 pounds.

24th. Menstruation due; had some backache; no blood; stayed abed three days.

June 6. Came to see me; brown as a berry; weight 130 pounds; appetite good; strength nearly regained; each month had had slight malaise; no bleeding; uterine cavity three and three-quarter inches; myoma not perceptible, except by bimanual examination.

March, 1884. Rapidly regained full strength; weight has continued at 140 pounds; no bleeding; sexual appetite unimpaired; tumor entirely gone; uterus three inches.

CASE II. *Severe Nymphomania, leading to Incipient Insanity; Menorrhagia; Tait's Operation; Recovery; Cure.*—Mrs. B., of New Jersey, *æt.* 42, American; eight children—last born eight years ago; operated on by me, successfully, four years ago for lacerated perineum, and later, another operation for severe hemorrhoids. Wife of a poor, ill-paid clergyman, and hence her life was a constant struggle properly to feed and clothe her large family. I have known her from childhood. She was always a most exemplary Christian woman.

Her head began to trouble her not long after the first operation, and she attributed it to the ether, which, however, she bore perfectly well in both operations. She had strange feelings as if unconscious, and in fright or dread of ether, especially at night. Exposed to the sun, in August, 1881, she had an attack of heat-exhaustion, followed by a second attack a week later. After this her men-

struation, always previously easy and regular, ceased for three months. During this time she was treated for malaria, and her head became worse, which she attributed to the quinine. She became very nervous and sleepless; lost all self-control; could not bear any noise of the children, the church-bell, or even her own voice. She became unable to do any work, and had extreme depression of spirits; attempts at suicide were repeatedly contemplated, and though almost determined to end her life, she was deterred by her religious fears. These emotions were readily confessed to me and to her husband. In December, 1882, her menstruation became very profuse, and was continuous for three months. Since then it is not continuous, but is still very profuse.

Meantime, in October, 1881, by spells her sexual appetite, till then a matter of little moment, became immoderate. Day and night it was an exquisite physical and mental torment, and even led her to repeated self-abuse when it could not be gratified. This nymphomania and her head symptoms were always worst at her menstrual period. Finally, she went voluntarily to an insane hospital, in March, 1882, being utterly unfitted for her household duties, and in constant dread of suicide; but soon returned home.

January 2, 1883. I saw her; head still as described, and she was almost desperate; uterus normal, except some erosion at os, and freely movable; clitoris and other generative organs normal. Her attacks of nymphomania were still frequent and severe, especially during menstruation. She was fast passing toward permanent insanity. She loathed herself for her abnormal sexual appetite; she had struggled against it, as well as against her suicidal intent, till she was ready to hail anything that gave the faintest hope of relief at any risk of life, for which she cared absolutely nothing. She had been under varied and

excellent care, and every moral means and all promising drugs had been freely tried. I therefore proposed Tait's operation, to which she and her husband instantly assented.

4th. Operation; ether; antiseptic method (carbolic acid), with spray; bladder emptied; incision three inches in median line upwards from pubes; layer of fat (she was well nourished) one inch thick, belly-wall two inches. Left ovary found without difficulty; its pedicle pierced by needle with eye in the point carrying a double carbolized silk ligature; ovary and Fallopian tube tied separately and ligatures cut short. One ovarian vein was varicose and as large as the little finger; ovary and tube both removed, Two pedunculated growths of the size of peas were attached to the ovary, one directly and another from the middle of a long foot-stalk attached at the two ends to the ovary and to the tissue between the ovary and tube. The right ovary was found with some little difficulty; as it was pulled out of the wound a small cyst burst. It was treated precisely as the left, and tube and ovaries removed. Both tubes and ovaries were intensely congested (her last menstruation was five days past); several small cysts existed in each.

Her recovery was uninterrupted. She had a little bilious vomiting and retention of urine requiring the catheter, but no pain; and no medicine.

8th. A moderate vaginal hæmorrhage began, which ceased four days later spontaneously.

9th, 11th, and 14th. The stitches were removed. Her highest temp. was 99.4°.

19th. Down stairs.

23d. Went home. Since then I have seen her repeatedly; the last time in the spring of 1885. Her mental symptoms and head troubles have gradually become better. For the first six months or more she was often despondent, but she

gradually recovered her cheerfulness to a large extent, resumed her household occupations, and is perfectly well. The nymphomania ceased from the time of the operation, save two very slight and short attacks. Coitus is rare, but is entirely normal, and is not followed by any tendency to her former deplorable condition.

CASE III. *Uterine Myoma; Severe and Long-continued Hæmorrhage; Operation; Death.*—Miss W., *æt.* 40, first menstruated at fourteen, always profusely. For the last seven to eight years much worse, the flow continuing ten to fourteen days. In May, 1884, she began to suffer from continuous hæmorrhage, which has persisted till the present date, January 2, 1885. Occasional severe hæmorrhages also occurred. She is very pale and anæmic, with waxy lips, and has lost much flesh and strength, especially of late. To-day I examined her under ether: uterus three inches in length, and movable; a myoma as large as the fist was discovered in the anterior wall and fundus. Hypodermatic injections of Squibb's ergot, in f℥j doses, every second day, were used, to which, later, was added f℥j of the fluid extract of ergot daily, with tonics and good diet.

January 29th. Has passed the menstrual period without noticeable hæmorrhage, and to-day, for the first time since last May (excepting two days), has dispensed with a napkin. From this date till April her menstruation ceased. In April and May she had a normal discharge. But in June the hæmorrhage returned, and continued so profusely as to threaten life.

July 4th, 1885. The hæmorrhage having been checked for three days by the above means, I operated. The tumor, which had clearly increased in size, was immediately seen on uncovering the belly. Ether; antiseptic precautions, including the spray (carbolic acid); bladder emptied. The

enlarged uterus was so much in the way that the ovaries could not be seized through the small incision first made in the linea alba, the ovaries not having been carried up with it, and it had to be prolonged one inch above the umbilicus. The whole hand had to be introduced, the uterus lifted and pushed forcibly aside, and the ovaries were even then reached with the greatest difficulty, and after several attempts. The ovary and tube on each side were removed, the pedicle being tied with stout carbolized silk, which was cut off short.

The left tube was attached to the ovary at the fimbriated extremity; two cysts, one filled with blood and one with serous fluid, existed in this ovary, the stroma of which was largely cirrhosed. One large (size of English walnut) and one smaller serous cyst were found in the right ovary, and its stroma was atrophied and cirrhosed. All four cysts were ruptured during removal. About eight ounces of serum were found in the peritoneum.

5th. The wound was united with silver wire sutures after careful cleansing of the peritoneal cavity (there was no bleeding), and then dressed with carbolized gauze. Symptoms of peritonitis began to develop, and in spite of all remedies progressed to a fatal issue on July 7. The temperature was 102°-103° till shortly before death, when it rose to 106°.

Autopsy, July 8th. Recent lymph was found over a considerable portion of the belly contents, with an ounce of pus in Douglas's *cul-de-sac*. No hæmorrhage had occurred.

CLINICAL REPORTS.

CLINICAL LECTURE ON LUPUS VULGARIS, AT THE COLLEGE OF PHYSICANS AND SURGEONS OF CHICAGO.

By HENRY J. REYNOLDS, M. D. *Professor of Skin-Diseases, Dermatologist to the West-Side Dispensary, Surgeon to the Department of Genito-Urinary Diseases, West-Side Dispensary, Chicago.*

Gentlemen:

I wish to invite your attention to-day to a consideration of the disease known as lupus vulgaris.

The case of the lady before us illustrates the disease in a most typical manner, but before referring to this individual case, I prefer that you have some knowledge of the general characteristics of the disease.

Lupus vulgaris belongs to the class of skin diseases known as "new growths," and owing to the varied appearance of which, in different cases and at different times, numerous names have been applied to it; as lupus exedens, lupus verrucasus, lupus discretus, lupus vegetans, etc., all of which, however, are embraced under the head of lupus vulgaris, and are simply different manifestations of the same disease. It must be understood, however, that the name does not embrace the disease known as lupus erythematosus, which, though somewhat similar in behavior, is usually regarded as an entirely distinct affection. Lupus vulgaris generally first manifests itself in childhood. If not seen by the physician till adult life or old age, the previous history—old scars, etc.—will almost inva-

riably reveal the previous existence of the disease or of trouble of a similar sort. It may last all through life, and it is not contagious. It may occur upon any portion of the integument of the body or of the contiguous mucous membrane, but it is most frequently found upon the face, with a preference for the nose. In the destructive process the skin, mucous membrane and cartilages may be involved, but unlike syphilis it spares the bone. The disease first manifests itself in the form of soft pin-head to small pea-sized brownish red or yellowish papules which, from being deeply seated in the corium, are at first scarcely perceptible to the touch. By enlargement and aggregation of these small growths, which progress extremely slowly, larger nodular or tubercular masses are formed; and by the subsequent breaking down of the same, we have the characteristic ulceration, cicatrization. etc. The small growths may, on the contrary, atrophy and become absorbed without breaking down. The disease, though chronic and very slow in its progress, is an extremely destructive one, especially in the region of the face, sometimes destroying almost the entire nose, eyelids, etc. There is an entire lack of symmetry in the disposition of the lupous growth, occurring as it does in irregular, uneven patches here and there. It may involve only one side of the face and at the same time a portion of an extremity, as in a case at present under my care. The disease, though not uncommon in Germany, is quite rare in this country. The ulcer of lupus vulgaris has a reddish, indolent, granulating base which bleeds easily, and is surrounded by a soft, flat, neither elevated nor undermined margin. Crusting is not a prominent feature, and there is little or no pain connected with the disease.

DIAGNOSIS.— The principal diseases from which lupus vulgaris is to be differentiated are syphilis, superficial epithelioma

and lupus erythematosus. By close attention to the following diagnostic points, a diagnosis can almost invariably be made with positiveness:

LUPUS VULGARIS.	SYPHILIS.
Almost invariably first manifests itself in childhood.	Usually in adult life.
Is not hereditary.	May be.
Never occurs in infancy.	It may.
Rare in this country.	More common.
Papules small, soft, deep, not elevated, and may reappear in the scar.	Larger, harder, elevated, and never reappears in the scar.
If female, not necessarily any previous history of abortions.	If female, may have previous history of abortions.
Generally local.	Liable to be a tendency to general distribution.
Progresses very slowly.	More rapid.
Margin ill-defined and uneven.	Well defined.
Never affects the bone.	It may.
No syphilitic history.	Almost invariably a history of primary and secondary syphilis in adult.

THE ULCER.

Generally begins from an aggregation of points or papules.	Generally from single point.
Is shallow, with red granulating base.	Deep.
Margin not abrupt, elevated nor undermined.	Margin, abrupt, elevated and undermined.
Secretion scanty.	More profuse.
Odorless.	Fetid.
Little crusting.	More crusting.
Resulting scar always white.	Often pigmented.
LUPUS VULGARIS.	SUPERFICIAL EPITHELIOMA.
Generally begins in childhood.	Usually found in old age.
Starts as multiple discrete papules which may each form an ulcer.	Starts within from one or an aggregation of papules which ultimately form only one ulcer.

Not painful.	More or less painful.
Progresses very slowly.	Progresses more rapidly.
Becomes irregularly nodular.	Does not become nodular.
Becomes diffuse and ill-defined.	Does not become diffuse and is well defined.

THE ULCER.

Generally multiple.	Usually single.
Shallow, with red granulating base which bleeds easily.	Deep, with hard indurated, uneven base.
Edges ill-defined and neither elevated, everted, nor undermined.	Edges clean-cut, abrupt, indurated, and everted.
Ill-defined, red, unhealthy skin outside the margin of the ulcer, due to the more diffuse nature of the disease.	Surrounded by healthy skin.
Moderate amount of secretion.	Secretion more scanty and liable to be tinged with blood.
Secretion inodorous.	Secretion fetid.
Presence of the characteristic non-ulcerative papules found in the scar and healthy skin.	No elementary papules found at same time as ulcer.

Lupus erythematosus may at once be differentiated from lupus vulgaris by the absence in the former of deep-seated papules, and of ulceration and discharge by its occurring first in adult life, by its symmetrical distribution on each side of the face, as a rule, by its firmly adherent yellow scales, and by the absence of the nodular condition characteristic of lupus vulgaris.

The history of the case we are now about to operate upon is as follows: She is aet. 48, German, though thirty years in this country. Always enjoyed good health (except that she was always subject to what was called eczema) until five years ago, at which time her present disease broke out, appearing first on the right leg, below the knee, where you now see the scar, followed very shortly afterwards by a similar outbreak

in several places on the face. The disease gradually grew worse ever since, some patches becoming atrophied and absorbed and others going on to ulceration, and subsequently cicatrization, etc., till we now find the present distorted, ulcerated condition. You will notice that the lower eye-lid is all gone, both alæ of the nose, and the upper lip are badly involved though not yet ulcerated; an ulcer the size of a dollar on the centre of the fore-head and an indurated, red, nodular and partly ulcerated surface one to two inches in diameter, extending from just below the left eye downwards past the left angle of the mouth to a point beneath the chin.

TREATMENT.—While the patient is being placed under ether we will refer briefly to the treatment. Various methods and remedies are adopted in the treatment of this disease; the simplest, and I may say, the least effective, being the local application of such remedies as green soap, stimulating lotions, caustics, etc. When the affection is mild and there is already a tendency to atrophy and absorption such treatment may be all that is required. Another and more effectual method is that of multiple linear scarification of the part; a number of parallel incisions being made just deep enough to go down to the healthy tissue, the same being then crossed by similar incisions. Another, the most effectual in advanced cases, and the one we will adopt in this case is that of erasion or scraping with the dermal curette. We will now proceed with the operation. The spoon-shaped instrument I now show you is what is called the dermal curette and with it we will scrape away as far as possible the diseased tissue, which as you will observe is easily done, as this lupus growth, whether papular, tubercular or advanced to ulceration, gives way very readily in front of the curette, and scrapes out almost like cheese or rotten wood, leaving at the margins the normal tissue, which is much

more resisting and cannot readily be thus removed. You will observe also that more of this tissue scrapes away than we would have expected, but we must go on till we meet with the resisting healthy tissue. You see we have been obliged, with the rest, to remove almost completely the alæ of the nose, however, in advanced cases like this, nothing short of heroic measures would be of any avail. Having now gotten rid of everything that can be scraped away, we will apply nitrate of silver thoroughly to all the scraped surface, as also to the eyelid and inside of the nose, with a view to destroying any remaining diseased tissues; and will order, as after-treatment, an ointment of iodoform ℥ i, pyrogallic acid ℥ i, Ung. aq. Rosæ ℥ i.

One peculiarity of this case is that we have not good evidence of the existence of the disease in early life. It is not known however, that she did *not* have it, as a history is given of "eczema" which may in reality have been lupus; the papules constantly becoming atrophied and absorbed without giving rise to any well marked lupus symptoms until later in life.*

MERCY HOSPITAL SURGICAL CLINIC, OF PROFESSOR EDMUND ANDREWS, M. D., LL. D.

I. FISTULA OF THE NECK.

This patient has a *fistula* in his neck, just below and behind the angle of the inferior maxillary bone. Some of the glands in this region are enlarged, but I cannot say whether it is from tubercular infiltration or some other cause, either malignant or

*The patches were entirely healed in three weeks after the operation, but a few spots will require to be scraped again.

non-malignant. This abscess has been on the patient's neck for about a year. Probing reveals the presence of a sinus leading inwards and downwards to several enlarged cervical lymphatic glands; we will now anæsthetize the patient, and divide, with a probe-pointed bistoury, the tissues forming the *fistula*. There are two tuberculous glands present in this abscess. These must be removed to secure recovery, and even then, it cannot always be promised, for, no matter how careful the surgeon may be, sometimes a new abscess will form. In a large majority of instances the operator will be quite successful in eradicating the tubercular disease in the region, by enucleating all of the infiltrated glands he can discover. I have now extirpated the caseous glands, and, with my finger in the *fistula*, I can feel the carotid artery pulsating. This operation has taken a little more time than it would under ordinary circumstances, but, on account of the close proximity of the carotid artery, and to avoid wounding it, I have had to work unusually slowly and carefully. I will not introduce the drainage tube, because it would lie directly on the artery mentioned, and, by the constant pulsation of the vessel against the rubber drainage-tube, the continuity of the arterial walls would, possibly, be injured, though it is by no means certain that such would be the case. In abscesses similar to this, with a large artery near the surface, drainage is best facilitated by the use of silk setons. The etiology, prophylaxis and treatment of these tubercular glands have not been reduced to a science; if they were, it would be much better for the patient. In cases of *sarcoma*, *carcinoma* or *tuberculosis* of any of the superficial lymphatic glands, the lungs, also, are apt to become infiltrated by the disease, the germs being carried to the lungs by the venous system. It is for this reason that surgeons consider it the best treatment to excise these diseased glands. As proof

that the lungs are prone to tubercular infection when the lymphatics are previously affected by a caseous deposition, I will relate the history of a case of glandular enlargement in the axillary region, which before the incision was supposed to be limited to only one or two glands, but after cutting into them many were found to be involved, some twenty or more were removed, and, instead of being entirely superficially located, as was at first supposed, some were found to be very close to the axillary artery. This patient then went east, to Montreal, a peculiarly tubercular climate, at least more so than Chicago. After having been there sometime, a prominent physician, who was eminently able, diagnosed incipient pulmonary *tuberculosis*. The patient was then sent to Colorado, where he in part or almost wholly recovered. *A propos* of this affection, as it is exceedingly interesting, I will mention a patient of mine who had *tuberculosis* of both *testes;* he did not want them extirpated; I did not remove them, and, for a period of twenty years, I have rather defied authorities by not excising these caseous testicles. My treatment has been to lance them occasionally and thus, theoretically, to save them; I have never heard of any of my patients thus treated being affected with *tuberculosis pulmonalis*. Several eastern surgeons agree with me in thinking that there is too much indiscriminate castration as a remedial agency in tubercular *testes*. The patient before us gives a history of *phthsisis*, his father having died of the affection. There is no other history of *phthisis pulmonalis* in his family. The silk setons being in place, the wound will be stitched by a continued suture and dressed antiseptically.

II.—CHRONIC SYNOVITIS OF THE LEFT KNEE.

This case of synovitis has continued through a period of three years, and the patient thinks it is a result of having had to kneel at his work for a period of two weeks. Eight

months ago, however, a horse kicked him just below the patella, and the disease has been growing gradually worse since. In a large number of cases of synovitis, the patients can recall some act of violence that the part has received; but, even then, the blow is not always the cause of the inflammatory process, for tuberculosis figures very prominently as an etiological factor in the production of synovial inflammations. This patient was born in Marshall County, Indiana, a not specially tubercular region, if anything more favorable than Chicago. I mention his birthplace, because, if he came from a peculiarly tuberculous climate, we should apprehend that the synovitis would be very apt to be complicated by a caseous deposition in the tissues of the joint. As it is, we do not so much fear it. Inspection does not reveal the hollow that is usually found on each side of the patella. There is no anchylosis of the joint. It permits slight motion without pain. There is too much synovia present. The patient knows comparatively little about the anatomy of the part, but knows enough about the nervous impressions, for such patients usually hold the knee bent at a certain angle, as, in any other position, it is very painful. By this protracted flexion, the muscles, as well as the ligaments, attain a permanent contraction, thus hindering movement. In this case there is an inflammation of all the tissues of the joint; beginning with the synovial membrane, and going down through the bone, involving even the canaliculi. Towards the surface we find the muscles and ligaments are also involved in the inflammatory process. The slightest pressure of the synovial surfaces against each other produces considerable pain; but even a large amount of stretching does not elicit pain. Treatment: Cases of synovitis, either tubercular or non-tubercular, would tend to a spontaneous recovery more readily,

if it were not for the constant friction and pressure to which most patients subject their inflamed knees. Some surgeons think that friction is the only element to be eliminated, and accordingly, secure immobility to effect a recovery. Friction and pressure of the joint-surfaces upon each other are both evil influences, and both must be overcome by the combined help of extension and immobility. In all cases of synovitis except those of rheumatic origin, extension is an important part of the treatment. In the first place Sayre's apparatus, or any simple splint, using rubber adhesive plaster to retain the appliance *in situ* is good treatment. Sayre claims that an effective extension-splint cannot be applied to a bent knee until it is straightened. It is true, his brace is not applicable to bent articulations, but other appliances are perfectly effectual and there is no real difficulty in their use. First, the patient can be kept in bed, and the limb be flexed by putting it over a double inclined plane or a pile of pillows, and applying adhesive-plasters and weight and pulley. By gradually lowering the angle, the limb will be both straightened and kept extended. Secondly, a splint can be arranged in the form of a bent trough, of light tin or brass, fitted to the posterior half of the member, and secured by leather straps laced to the thigh, and for extension, by adhesive straps attachedto the legs, extension downward may be made. Thus extension and immobility in the bent position are secured. Sayre's knee-splint is not used advantageously when the patient cannot be seen very often. If not watched, the patient is apt to mismanage the dressing and even to create ulcers on the limb, by the pressure of the edges of the metal supports, whose position he does not know how to control. I like the bent splint above mentioned. It is constructed in the following manner. Take a plaster cast of the posterior half of the leg and thigh, and

have a tinsmith fit a brass or tin casing to it. Above the knee rivet on in front a pair of firm leather flaps to be laced up and thus surround the thigh for counter-extension. The ben, knee will now fit nicely into the splint. Apply a broad adhesive strap on each side of the leg, fasten to the lower end of each strap a piece of strong elastic webbing. Let the webbing run down to friction rollers at the bottom of the splint, then turn it across the rollers, and upward outside of the apparatus and fasten to it a pair of button-knobs, or two buckles. The tightening of these straps makes firm and motionless extension.

LUPUS OF THE LARYNX. *By* FRANK O. STOCKTON, M. D. *Professor of Laryngology, College of Physicians and Surgeons, Chicago.*

This disease may well be called one of the curiosities of medicine, both on account of the limited number of cases reported and the scarcity of literature on the subject.

Of the thirteen cases thus far reported, five were contributed by Türck,[1] two each by Tobold[2] and Mackenzie,[3] one each by Ziemssen,[4] Grossman,[5] Lifferts[6] and Beningier.[7]

If the larynx of every subject suffering from cutaneous lupus were examined, Lefferts thinks it would be found more frequently, arguing no doubt from the fact that in most of the cases reported the laryngeal and cutaneous affections were associated.

1. Zeitschrift d. Gesellschaft d. Aerzte Zu Wien, 1859. No. 11.
2. Keklkoffkrankhiten, page 307.
3. Diseases of the Throat and Nose. Eng. Ed., page 396.
4. Cyclopædia of Med., N. Y. Ed., VII., page 854.
5. Aug. Wien Med. Ztg. 1877, XX., page 182.
6. Am. Jour. Med. Sci., April, 1878, page 370.
7. Annal. d. Maladies d. l'oreille et du larynx, July, 1878.

The etiology of lupus has never been clearly settled. Undoubtedly some constitutional defect is the cause. Just what this defect is, is very difficult to say. By some writers it is said to be scrofula. This I am unwilling to admit, as the scrofulous ulcerations that I have met with were of a very different character. I am inclined to think that lupus and tuberculosis are allied very closely.

The symptoms of this disease are in no way diagnostic. In the beginning we have possibly some sore-throat, slight difficulty in swallowing and dyspnœa, there is also hoarseness frequently amounting to complete aphonia. These symptoms are progressive in character as the disease advances.

Examination of the larynx reveals marked changes, but nothing peculiar to the disease; in fact, the many points of resemblance to syphilis, cancer and phthisis, are so marked that a diagnosis can only be made in most cases by exclusion, provided of course there is no cutaneous lesion.

Virchow's[8] description of a case of lupus seen by him will serve as a general description.

"There is an indurated cicatrix studded with thick knobs the size of a pea, extending from the dorsum of the tongue down to its base. The epiglottis was very hard, and bordered with hard warts. From this part the tissues were hardened and warty as far down as the trachea. The arytenoids were deeply ulcerated and surrounded with hard papillary growths."

He further states that the lupus nodules are composed of young and soft granulative tissue, which is usually very vascular. It contains small round cells and originates in the proliferation of the connective tissue and not of the epithelium.

The tendency of the disease is toward destructive ulceration and in apparant healing instead of a healthy cicatrix, a tissue

8. Thie Krankhaften Geschewülste, II., page 490.

of low vitality is found, which soon becomes the seat of a fresh outbreak.

From what has been previously stated it will be seen that the diagnosis of this disease is by no means easy except it be associated with cutaneous lupus.

In fact, a diagnosis can rarely be made at sight, but only through careful study and treatment.

Cutaneous lupus is considered an intractable disease, so that it would naturally follow that in the laryngeal cavity would be the same.

While not a dangerous disease in itself, the new mouths or warts may be so plentiful that they obstruct the glottis and interfere with respiration.

The action of this trouble is, as a rule, very slow and is occasionally arrested. Experience has shown that surgical and therapeutical means directed against the disease itself have very little or no effect, and that we must treat it through the general system.

The treatment is that usually followed in wasting diseases, viz.: cod-liver oil, and the various tonics. Occasionally caustic applications may be of use, and nitrate of silver appears to give the best results owing to its double action, caustic and stimulant.

To the thirteen cases recorded I wish to add another, making fourteen.

During December, 1884, George L., aged thirty-nine, a shoemaker, came under my care for a slight sore throat and a bad cough.

The patient was very much emaciated and quite pale, and spoke with a peculiar hoarseness. He said he had been troubled with what he thought was catarrh for the past ten or twelve years, but which of late had been getting worse.

On examining the throat it was found that the uvula was very much congested and enlarged, being about one inch long and three-quarter inch wide, and the exterior surface covered with warty growths.

The left palatine arch was very badly eroded, as well as the whole posterior surface of the velum, which was also dotted here and there with the warty growths. The posterior wall of pharnyx, from the base of the nares down to the border of the thyroid cartilage, was ulcerated, with scattered groups of the warty prominences, and coated with a thick yellow tenacious mucus.

The larynx on being examined showed the vocal cords very much congested, but no ulcerations. The arytenoids were deeply ulcerated and surrounded with the warts.

STATE BOARDS OF HEALTH.

THE ILLINOIS STATE BOARD OF HEALTH.

The quarterly meeting of *The Illinois State Board of Health* was held at Springfield on October 29 and 30.

The Secretary's report showed that 107 certificates for practice had been issued in the quarter ending September 30, upon diplomas of colleges in good standing.

Three were granted for a certain number of years' practice in the State, and seven duplicates were supplied for lost originals.

Thirty-four applications were refused, owing to the applicants' inability to reach the required standard in examination.

The Board has now ready for publication a Conspectus of Colleges, which will be embodied in the seventh annual report. This valuable conspectus will show the comparative status of every medical college as to requirements, curricula, fees, etc. The effect of this publication and of those which have preceded it will be seen in the alleged number of irregularities, evasions of requirements, granting of diplomas in violation of published and usual conditions—charges which are constantly being presented to the board.

A graduate of a school that has repeatedly found fault with the Board, charging that its graduates were not treated fairly, and heretofore failed to announce the usual preliminary education requirements before admitting students to its classes, although at the same time claiming that the requirements were fully carried out, applied during the quarter for a certificate based upon a diploma issued June 2, 1885. In accordance with the rule of the Board exacting an examination in branches or subjects of the Schedule of Minimum Requirements omitted or neglected by the college from which the applicant is graduated, the certificate was withheld pending such examination. The matter terminated by the withdrawal of the application, the applicant having "a chance to do better" in a neighboring State. His fitness for the study and the practice of medicine, and the manner in which the school enforces the preliminary-education requirement, may be inferred from this final letter:

——— ——— Ill July 1t '85

Mr J H Rauch Sir

In Reply woul Say that I red one year With ——— & with ——— of Ohio 3 years Practiced 3 years tend Lectures the Winter of 80 & 81 Practiced in ——— CO Ohio up to December last Then was at College untel the close on June 2th 85 Was born in ——— CO Ohio 1837 Taught

there & in this State up to the time of Reading Med thin Dropeted off I was Requiered to furnish a Certificate on My first Course of Lectures Also a Recommendation from My Precepter I have fulfilled the Requierements of the Collage and Came here to practice but have a Chance to do better away from here
—have Baught an Intrust in a Drug Store in.Ind you will send my Diploma to ——— Ill if you will send a Certificate I will be Obliged to you if not all Rite as I am going out of the State at all evence My age is 48 years Tought 7 Schools 5 Winters in Ohio (& 2 in this State in 1864 & 5) now it Remains with you the State Board Act on

yours as Ever Truley

———— M. D.

INDIANA STATE BOARD OF HEALTH.

INDIANA MEDICAL PRACTICE ACT.

The quarterly report of the Illinois State Board of Health says:

"An act regulating the practice of medicine, surgery and obstetrics was passed by the last Legislature of Indiana, the same going into effect on the 23d of July.

"While the law is better than none, it is yet very defective in that it leaves the county clerks the judges of the reputable character of Medical Colleges, thus placing a most important trust in the hands of officials who, however honest they may be, cannot have the special acquirements necessary to judge correctly regarding a Medical School's standing; and it is to be feared that this provision of the law will stimulate the graduation of incompetent individuals."

THE MICHIGAN STATE BOARD OF HEALTH,

In addition to its previous circulars on the Prevention of the Introduction of Communicable Diseases—has issued a special order (Circular 93) containing the following rules to be enforced in the transportation of dead bodies :

RULE 1. Before being placed in the coffin, the remains of the deceased shall be wrapped in a sheet thoroughly saturated with a strong solution of chlorinated soda, or chloride of zinc, one-half pound to the gallon of water, or a solution made in proportions as follows : water, one gallon: sulphate of zinc, eight ounces; common salt, four ounces.

RULE 2. The coffin shall be packed in a strong box, and shall be surrounded by sawdust, saturated with zinc solution of a strength equal to that required by Rule 1, above

RULE 3. The body shall not be accompanied by persons who (or articles which) have been exposed to the infection of the disease.

RULE 4. The coffin shall not be opened, neither shall the box be opened at the place of destination.

RULE 5. The burial shall take place immediately after arrival at the place of destination.

BOOK REVIEWS.

THE TECHNOLOGY OF BACTERIA INVESTIGATION. *Explicit directions for the study of Bacteria, their culture, staining mounting, etc., according to the methods employed by the most eminent investigators.* *By* CHARLES S. DOLLEY, M. D. *Boston*: S. S. CASSINO & Co. *1885. Chicago*: W. T. KEENER.

It could hardly be expected that Dr. Dolley, in so small a work, would exhaust the subject he has endeavored to treat. In his preface he states that his work is put forth with the view of stimulating careful study of schizomycetes by American investigators.

He has conveniently grouped his material under three heads: I. General Directions; II. Special Methods for Investigating Pathogenic Bacteria; III. Formulary. Under Part I. he reviews the most approved methods of obtaining and studying micro-organisms; (a) in the living state; (b) fixed, hardened, and stained,—including an allusion to the photographic branch of bacterial study. The author treats very exhaustively of the different modes of cultivation,—devoting, however, surprisingly little space to vaccination and inoculation experiments. Part I. closes with some remarks on what the writer styles "Biological Analysis," in which there is nothing new or especially interesting.

In Part II. the different recognized specific micro-organisms in disease are described, but we regret that the material col-

lected on such subjects as malaria, diphtheria, syphilis, and yellow fever is so meagre. The specific poisons of scarlatina, measles, meningitis, etc., are merely alluded to.

In Part III., viz., *Formulary*, the directions for the preparation of staining-fluids, culture-media, instructions as regards mounting, specimens, etc., are very full and clear, making the book a valuable one for the laboratory.

The work is placed before the public in an excellent form, but we regret that it is devoid of illustrations, for in no subject, we believe, are illustrations more necessary. We believe it to be a book which the profession needs, and which will fully repay any one who will read what the author has so carefully collected and systematically grouped. At the end of each section, references are given to the different authorities, making it very easy to go back to the original sources of information. F. C.

A TEXT-BOOK of NURSING, FOR THE USE OF TRAINING SCHOOLS, FAMILIES, AND PRIVATE STUDENTS. *Compiled by* CLARA S. WEEKS, *Graduate New York Hospital Training-School, Superintendent of the Training-School for Nurses, at Paterson, New Jersey. New York:* D. APPLETON & Co. 1885. *pp.* 396. *Chicago:* JANSEN, MCCLURG & Co.

Obviously a treatise on nursing should be a condensed and practical hand-book, yet comprehensive and thorough in its instructions, if it aspires to the position of a text-book.

All of these merits belong to this work in a high degree. It not only contains careful and sensible directions for almost all the duties pertaining to the management of the sick-room, but it is also furnished with a complete series of questions

for review and examination, so that it is admirably adapted for use in training schools.

Private students and families will find the book of use, and practitioners, as well as their assistants, will receive some benefit from perusal of its pages.

Some of the chapters are headed as follows: Beds and Bed-making—Bed Sores; Circulation—Pulse—Temperature—Respiration—Ventilation—Warmth; The Observation of Symptoms, Medicines and Their Administration; Food and Its Administration; Enemata — Suppositories — Douches. Counter-Irritants—Cups—Leeches — Poultices — Fomentations, *etc;* Baths—Massage—Urine; Surgical Nursing—Operations — Bones — Fractures — Dislocations; Bandaging; Hemorrhages; Obstetrics; Emergencies; Sick Children—Questions for Review and Examination. E. W. A.

HUMAN OSTEOLOGY, COMPRISING A DESCRIPTION OF THE BONES, WITH DELINEATIONS OF THE ATTACHMENTS OF THE MUSCLES, THE GENERAL MICROSCOPIC STRUCTURE OF BONE, AND ITS DEVELOPMENT. *Wood's Library. 1885.*

This work, as the title implies, is devoted to osteology. In many respects the practitioner and the student of medicine will find it a very interesting and practical treatise on this subject. The author has a happy faculty of blending comparative with human anatomy, which enables the student the more readily to fix important points in his memory, by association, and at the same time to enlarge his ideas of anatomy in general.

That portion of the treatise which relates to the microscopic structure of the bones and their development is excel-

lent. The language is consise without being laconic, and the explanations are so clear that every junior student should readily comprehend them; while for the busy practitioner this is an epitome of the knowledge on these subjects, accepted by the experts of the medical profession to-day. The pages given to ossification are particularly good; by way of illustration read, "the fact that bones are developed from several ossific centres, separated by layers of cartilage, is advantageous to growing animals, for it is necessary to have the shaft ossified to support weight, while other parts remain cartilage and diminish concussion, these acting as buffers to break shock, etc." Under microscopy, the discovery of Mr. Queckett is mentioned, in the statement that lacunæ vary in size and shape in the four great classes of animals, whereby the identity of the bone can be established, as to whether it belongs to a mammal, bird, reptile or fish.

The student who reads this part of the work carefully will find himself prepared to comprehend, intelligently, the pathological changes which osseous tissues undergo.

The descriptive portion is most interesting in two particulars: first, in the application of the principles of mechanics to the attachments of the muscles and to the direction of their force: and second, in the constant allusions, by way of comparison, to the analogous structures in the lower animals. F. C. S.

RATIONALISM IN MEDICAL TREATMENT, OR THE RESTORATION OF CHEMISM.—THE SYSTEM OF THE FUTURE. *By* WILLIAM THORNTON. *Boston. 1885. pp. 46.*

What the writer of this essay calls a new system is described by him as, "The internal treatment of diseases by

chemicals of like nature to those that are found within the body in a healthy state."

This is the nearest approach he makes to committing himself to anything in the disconnected mass of verbiage here presented. The title is misleading, since there is no system formulated in the pages of the book. It contains simply a loose string of meaningless expressions, which the writer has evidently been turning over, for some time, in what he is pleased to term his mind.

Whether he is simply a man of weak intellect, honestly believing in his own vaporings, or a shrewd quack, seeking to advertise himself by his oddity, is not apparent. The little volume, though handsomely printed, has an uncanny look, from the fact that the leaves are printed only on one side. E. W. A.

THE PEDIGREE OF DISEASE, *being Six Lectures on Temperament, Idiosyncrasy and Diathesis. Delivered in the Theatre of the Royal College, 1881. By* JONATHAN HUTCHINSON, F. R. S., *Professor of Surgery and Pathology in the College, etc. New York: William Wood & Co. 1885. Chicago.*

The point of view from which this old subject is treated is somewhat novel, and has received the approval of Sir James Paget in his Bradshaw Lecture of last year. Doubtless the recent progress of exact pathology has turned away attention, to a great extent, from such vague differences as those implied in the terms diathesis and temperament. Indeed, many pathologists, and especially those who follow the German investigators, practically ignore these terms as being too vague to be called scientific.

Older physicians used to prescribe for the patient's diathesis where we prescribe for his disease, and the minute classification of temperments, in which they delighted, only excite weariness when we recall them now. It is well to inquire, as the writer does however, whether this tendency has not gone too far, and see if it be true, as he claims, that we are now neglecting, unwisely, the study of those differences between man and man of which, for the most part, physiology takes no cognizance, but which may yet prove of much importance in modifying the processes of disease.

In these six lectures the subject is very clearly and comprehensively handled, so as to form a book full of suggestiveness to those who have had much clinical experience.

E. W. A.

ACNE, ITS ETIOLOGY, PATHOLOGY AND TREATMENT, A PRACTICAL TREATISE BASED ON THE STUDY OF ONE THOUSAND FIVE HUNDRED CASES OF SEBACEOUS DISEASE. *By* L. DUNCAN BULKLEY, A. M., M. D., *Physician to the New York Skin and Cancer Hospital, etc., New York and London*; G. P. PUTNAM'S SONS, 1885, PP. 280.

The author of this treatise has already made himself known to the profession at large by several useful contributions to dermatological literature, and, some years ago, by a translation of Neumann's hand-book of skin diseases, which has long been superseded by more modern treatises of wider scope. The author has here selected the relatively small field of disorders of the sebaceous glands, represented by acne as a type, for the field of his labors. The consequence is, that we find here a volume of over 200 pages, treating fully and well-nigh exhaustively of the topics practically and concisely discussed in a score

of pages in most of the standard text-books of dermatology. Efforts of this kind, are, however, not without benefit to some. There is first the author, who is better for such full study of a particular field, and the embodying of the fruits of his own and of others' research in his pages. There is next the collector of dermatological literature of all sorts, who is pleased to be able to place a good monograph on acne upon his reference-shelves; and there is last, the general practitioner, who, not content with what he finds more concisely given by others, and eager to prepare himself for a special case, invests with that purpose in view. But there is also a class of people actually harmed by books of this sort. It is they who, themselves suffering from the diseases discussed by any author, purchase his work in the hope to find in this way relief from their trouble. It is those who pay the largest price for their ignorance. There is no class of patients so hopelessly abandoned to the hypochondriacal and valetudinarian side of every disorder, as those who study their own diseases. The last and lowest stage of these unfortunates, is when they study medicine with the same end in view. Nowhere is there such a field for the growth of these morbid impulses, as in the class of disorders represented by acne, a class almost never associated with grave physical disease, but having a chief importance in relation merely to comeliness of the person.

The chapter here given on anatomy, and that also on the nosology of the disorders of the sebaceous glands, are particularly well written, and exhibit the fruits of some commendable pathological work. In the chapter, however, on etiology, the author ignores altogether the causation by ingested medicaments of the disease he discusses. Under the title of "Acne Artificialis," however, under which term are included the eruptions induced by both ingested and externally applied

drugs, in another part of his book, he seems to put such confidence in the results of the studies of Pellizari, Thin, Duckworth, and others, as to justify him in setting the medicamentous rashes aside in a separate category by themselves. And yet it is certain that very few experts of any experience in this field will deny that nearly one half of all cases of acne, which come under their observation, have been aggravated by medicaments swallowed, purchased knowingly of druggists, or incorporated in many of the so-called blood, liver, and kidney-purifiers. Not only the iodine and bromine salts, but also arsenic and other medicinal substances figure in many cases as efficient producers of the disease. It is surprising that the author should consent to reduce this vast subject to the compass of a few paragraphs, seeing that a book fully as large as his might be well and instructively written on this practical point alone. But the great and growing field of preventive medicine calls for more devoted, more self-sacrificing, more unselfishly educated disciples than the average book-maker. It is more lucrative to "treat," than to show how not to "treat." It pays better to have the reputation of "curing," than to watch with confidence and content the final involution of a disorder, whose satisfactory ending has been foretold by science!

With this explanation of the main defects of the book before us, it is just to say that, as regards most other points, the author has given a full and satisfactory review of the literature of his subject.

The formulary appended will prove useful to those who see many cases of disorders of the sebaceous glands; for those who see but few, the chapters on the management of the disease in general, may be consulted with profit. The typographical appearance of the work is all that could be desired.

EPITOME OF DISEASES OF THE SKIN, BEING AN ABSTRACT OF A COURSE OF LECTURES DELIVERED IN THE UNIVERSITY OF PENNSYLVANIA, DURING THE SESSION OF 1883–4. *By* LOUIS A. DUHRING, M. D., *Professor of Skin-Diseases. Reported by* HENRY WILE, M. D., *Clinical Assistant in the Department of Skin Diseases in the University Hospital; Philadelphia*: J. B. LIPPINCOTT COMPANY, *Chicago*, 1885, PP. 130.

This miniature treatise on cutaneous diseases will commend itself to the profession, rather by the just eminence of the author's name, than by its intrinsic excellence. Few beside students of medicine are capable of appreciating in the highest degree a work so small that it dismisses a disease in a paragraph. Still, if adversity has its uses, so also have the helps, the hand-books, the epitomes and the manuals. Among them there are none so useful as those where the abstract is made, not by a penny-a-liner, but by the master himself. Among all the epitomes, therefore, judged by this fair standard, there is none better than Dr. During's useful little compendium.

THE TECHNOLOGY OF BACTERIA INVESTIGATION. *Explicit directions for the study of Bacteria, their culture, staining, mounting, etc, according to the methods employed by the most eminent investigators.* By CHARLES S. DOLLEY, M.D., *Boston:* S. S. CASSINO & CO, 1885. *Chicago:* W. T. KEENER.

It could hardly be expected that DR. DOLLEY, in so small a work, would exhaust the subject he has endeavoured to treat. In his preface he states that his work is put forth with the view of stimulating careful study of schizomycetes by American investigators.

He has conveniently grouped his material under three heads—I. General Directions. II. Special Methods for Investigating Pathogenic Bacteria. III. Formulary. Under part I. he reviews the most approved methods of obtaining and studying micro-organisms, (a) in the living state; (b) fixed, hardened and stained, including an allusion to the photographic branch of bacterial study. The author treats very exhaustively of the different modes of cultivation; devoting, however, surprisingly little space to vaccination and inoculation experiments. Part I. closes with some remarks on what the writer styles "Biological Analysis", in which there is nothing new or especially interesting.

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The work is placed before the public in an excellent form, but we regret that it is devoid of illustrations, for in no subject we believe, are illustrations more necessary. We believe it to be a book which the profession needs, and which will fully repay any one who will read what the author has so carefully collected and systematically grouped. At the end of each section, references are given to the different authorities making it very easy to go back to the original sources of information. F.C.

BOOKS RECEIVED.

BOOKS AND PAMPHLETS RECEIVED.

Fownes's Manual of Chemistry. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

A System of Obstetric Medicine and Surgery. By Robert Barnes, M. D., and Fancourt Barnes, M. D. Philadelphia: Lea Brothers & Co.. Chicago: Jansen, McClurg & Co.

A Text-Book of Pharmacology, Therapeutics and Materia Medica. By T. Lauder Brunton, M. D., D. SC., F. R. S. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

The Essentials of Histology. By E. A. Schäfer, F. R. S. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

A System of Practical Medicine by American Authors. Edited by William Pepper, M. D., LL. D. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

A Practical Treatise on the Diseases of Children. By Alfred Vogel, M. D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

The Science and Art of Midwifery. By William Thompson Lusk, A. M., M. D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

Manual of the Diseases of Women. By Charles H. May, M. D. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

A Text-Book of Nursing. Compiled by Clara S. Weeks. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

Rationalism in Medical Treatment, or the Restoration of Chemism. By William Thornton. Boston: Published by the author.

Clinical Therapeutics. By Prof. Dujardin-Beaumetz. Detroit: George S. Davis.

Post-Mortem Examinations: with Especial Reference to Medico-Legal Practice. By Professor Rudolph Virchow. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

Epilepsy and Other Chronic Convulsive Diseases. By W. R. Gowers, M. D., F. R. C. P. New York: William Wood & Co. Chicago: W. T. Keener.

A Reference Hand-Book of the Medical Sciences. Edited by Albert Buck, M. D. New York: William Wood & Co. Chicago: W. T. Keener.

Epitome of Diseases of the Skin. By Louis A. Duhring, M. D. Philadelphia: J. B. Lippincott & Co. Chicago: W. T. Keener.

Practical Surgery. By J. Ewing Mears, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

Applied Medical Chemistry. By Lawrence Wolff M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

Milk-Analysis and Infant-Feeding. By Arthur V. Meigs, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

Transactions of the Texas State Medical Association. 1885.

The Physician's Visiting-List for 1886. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

Acne, its Etiology, Pathology and Treatment, by L. Duncan Bulkley, A. M., M. D. New York: G. P. Putnam's Sons.

Practical Therapeutics:—A compendium of selected formulas and practical hints on treatment, by Edward J. Bermingham, A. M., M. D. New York: J. R. Bermingham.

A Treatise on Nervous Diseases; their Symptoms and Treatment, by Samuel G. Webber, M. D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

The Use of the Microscope in Clinical and Pathological Examinations, by Dr. Carl Friedlander. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

The Management of Labor and of the Lying-In Period, by Henry G. Landis, A. M., M. D. Philadelphia: Lea Bros & Co. Chicago: Jansen, McClurg & Co.

Applied Medical Chemistry, by Lawrence Wolff, M. D. Philadelphia: P. Blakiston Son & Co. Chicago: W. T. Keener.

A Text-Book of Medical Chemistry, by Elias H. Bartley, M. D. Philadelphia: P. Blakiston Son & Co. Chicago: W. T. Keener.

Tracts on Massage No. 11; the Physiological Effects of Massage, by Benjamin Lee, A. M., M. D., Ph. D. Philadelphia. 1885.

The Pedigree of Disease, by Jonathan Hutchison, F. R. S. New York: William Wood & Co. Chicago: W. T. Keener.

Inorganic Chemistry, by Edward Frankland and Francis R. Japp. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

Cutaneous Memoranda, by Henry G. Piffard, A. M., M. D. Third Edition. New York: William Wood & Co. Chicago: W. T. Keener.

Venereal Memoranda, by P. A. Morrow, A. M., M. D. New York: William Wood & Co. Chicago: W. T. Keener.

Facts and Mysteries of Spiritism, by Joseph Hartman. Philadelphia: Thomas W. Hartley & Co. Chicago: Jansen, McClurg & Co.

Text-Book of Ophthalmoscopy, by Edward G. Loing, M. D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

Climatology and Mineral Waters of the United States, by A. N. Bell, A. M., M. D. New York: William Wood & Co. Chicago, W. T. Keener.

Diseases of the Lungs, by Prof. Germain Sée. Translated by E. P. Hurd, M. D. Chicago: W. T. Keener. New York: William Wood & Co.

Diagnosis of Diseases of the Brain and of the Spinal Cord, by W. R. Gowers, M. D., F. R. C. P. New York: William Wood & Co. Chicago: W. T. Keener.

PAMPHLETS RECEIVED.

Surgical Treatment of Cysts of the Pancreas. By N. Senn, M. D.

Iritis: Its Relation to the Rheumatic Diathesis and its Treatment. By Charles J. Lundy, A. M., M. D.

The Induction of Premature Labor in Certain Cases. By Walter Coles, M. D.

Note on a Form of Post-Neuralgic Insanity. By C. H. Hughes, M. D.

The Role of Bacteria in Parturition. By Henry O. Marcy, A. M., M. D.

A Case of Membranous Occlusion of the Posterior Nares, by W. E. Casselberry, M. D.

A New Bandage for Fixation of the Humerus and Shoulder-Girdle, by Charles W. Dulles, M. D.

The External Therapeutics of Pulmonary Consumption, by Thomas J. Mayo, M. D.

Some of the Surgical Sequelæ of the Exanthenes and Continued Fevers, by Roswell Park, A. M., M. D.

Address of the State Board of Health to the People of Pennsylvania.

Observations on the Cause and Treatment of Infantile Eczema and Allied Eruptions, by Henry T. Byford, M. D.

Abnormal Positions of the Head. What do they Indicate? By Edward Borck, A. M., M. D.

The Respiratory Function of the Human Larynx, by Franklin H. Cooper, M. D.

A New Electric Light. Dr. William Chapman Jarvis.

Clinical Notes on Uterine Surgery. J. Marion Sims, A. B., M. D. New York: William Wood & Co. Chicago: W. T. Keener.

Effects of the Use of Tobacco. Hobart Amory Hare, M. D.

Report of the Committee on Disinfectants of the American Public Health Association.

Transactions of the American Ophthalmological Society.

Hereditary or Degenerative Ataxia. W. Everett Smith, M. D.

Aids to Surgery. George Brown, M. R. C. S., L. S. A.

Aids to Obstetrics. Samuel Hall, B. A., M. D.

Aids to Medicine. C. E. Armand Semple, B. A., M. D,

Aids to Gynæcology. Alfred S. Guebb, L. R. C. P., M. R. C. S.

Manuel des Injections sous-cutanées. Par Bourneville et Brixon.

Observations upon the Mutual Relations of the Medical Profession and the State. Donald Maclean, M. D.

Treatment of the Umbilicus in the New Born. E. H. King, M. D.

Transactions of the American Otological Society.

NEWS ITEMS.

INTERNATIONAL CONGRESS.—SPECIAL ANNOUNCEMENT.—The Executive Committee of the Ninth International Medical Congress, to be held in the city of Washington, D. C., commencing on the first Monday in September, 1887, having accepted, under Rule 10 of the Committee on Preliminary Organization, the charge of the business of the Congress, hereby give notice to the members of the medical profession that they have been actively engaged upon, and have now nearly completed, the arrangements for this meeting; and they anticipate the hearty coöperation of the profession everywhere in developing this great scientific and humanitarian assembly.

By order of the Executive Committee.

HENRY H. SMITH, M. D., Philadelphia,
Chairman of Executive Committee.

NATHAN S. DAVIS, M. D., LL. D.,
Secretary-General of Ninth Int. Med. Congress.

Chicago, Nov. 24, 1885.

CHICAGO WATER-SUPPLY.—A systematic observation of the varying character of the water-supply of Chicago was begun early in September, under the direction of the Illinois State Board of Health. The chemical examinations by Prof. Long are made weekly, and coupled with the meteorological conditions, recorded and furnished by the U. S. Signal Service for this purpose, will result in a scientific determination of the

relation of the purity of the water-supply to the movement of the sewage contents of the Chicago river.

CHINESE-AMERICAN DOCTORS.—The *Times*, of Los Angeles, California, contains the advertising cards of several Chinese physicians, as follows:

Dr. Yep Bow Yuen

HAS PRACTICED FOR MANY YEARS with the well-known physician, Dr. WON TONG WING, in Canton, and is now opening an office at No. 104 Upper Main st. Can be found at office all hours, day and night.

Dr. Wong Him,

PHYSICIAN AND SURGEON — THE greatest Chinese Doctor. Makes a specialty of and cures Consumption, Diseases of the Head, Throat, Lungs, Liver, Stomach, Blood, etc. Office No. 28 Upper Main st., Los Angeles. P. O. Box 562.

Dr. Ngut Chow.

DR. WONG HAVING GONE TO CHINA, Dr. Ngut Chow, a graduate from the same universities at Hong Kong and Canton, will administer to the patients of Dr. Wong, having been tested and found able by him. No. 125 Upper Main st., Los Angeles, Cal.

DR. WONG.

Presumably these men practice only among their own countrymen, and are as ignorant as the other native physicians of China. The universities mentioned in one card are medical colleges of the lowest possible grade. A large part of the treatment taught consists in scarifying or acupuncture of various parts of the body. A life-sized manikin is used in teaching the different portions of the body to be so treated in the principal diseases. So limited is the knowledge of anatomy and surgery that only the most trivial minor operations are attempted.

THE following words formed the conclusion of a paper lately read by the Rev. Clinton Locke before one of the Chicago

clubs, on the question: "How Does a Doctor Look to a Clergyman?"

"I do really believe that on the face of the earth there is not a class of men more self-sacrificing, more desirous to benefit their fellow-creatures, more regardless of the mere getting of money and attaining of place than the members of the medical profession. I do not believe any of you, unless you have really examined the subject, have any idea of the amount of charitable work done by nearly every doctor in this city. Their time is often extremely valuable. People are often willing to give them any price to come to them, and yet they will cheerfully give hours and hours to the care of the poor, and by the bedsides of families of poor people from whom they know they will receive no remuneration. They are often exposed to very mean treatment. It is well known that they seldom take legal measures to secure their pay, and of this great advantage is taken. Babies do not come into the world with the label 'C. O. D.' pasted on them, nor can a doctor say to a man squirming in a bilious colic, 'Pay me that thou owest, or squirm indefinitely.' Yet, with all this before him, I do not believe any decent doctor ever refused to lend his aid to any suffering creature, no matter whether he was paid, or not paid. I have often known the doctors of St. Luke's Hospital to get up out of their beds in the middle of the coldest nights and hurry to the hospital to relieve, if possible, the agony of some pauper who would not even thank him. All honor to the noble guild of Æsculapius. No men deserve more at the hands of their fellow-citizens than they. Every man here knows what his family doctor is to him, how close a friend, how kind a counsellor, how trusty and how faithful. Think what the world owes of comfort and rescue from pain to the unceasing studies, the high-souled efforts of the doctors of England and America. How little they gain by it. How immeasurably we have entered into the fruit of their labors. Let me sum this up, for my time is out. Doctors are the best friends, the pleasantest company, the most generous, and the most self-sacrificing of any order of men it has been my lot to know."

THE CHICAGO

MEDICAL JOURNAL AND EXAMINER.

VOL. LII. FEBRUARY, 1886. No. 2.

ORIGINAL COMMUNICATIONS.

CLINICAL OBSERVATIONS ON THE EMPLOYMENT OF ANTIPYRIN IN TYPHOID FEVER. DR. M. MANNHEIMER, *of Chicago, Physician to Michael Reese and Alexian Brothers' Hospitals, Chicago.*

Encouraged by accounts which have appeared in European journals, relative to the usefulness of antipyrin when exhibited in typhoid fever, I lately introduced the remedy in the practice of the Alexian Brothers' and the Michael Reese Hospitals in this city.

With the assistance of Doctors Clevenger, Hoelcher, Frankenthal and Collins, 175 cases of typhoid fever were treated in these institutions during the year 1885, the resulting death rate being 1.71 per cent.

One hundred and thirty-nine of these patients were cared for at the Alexian Hospital, of whom three died: and thirty-six patients entered and were discharged convalescent from the Michael Reese Hospital, with no fatal result. The mortality was thus 2.15 per cent. for the hospital first named; and 1.71 per cent. for both institutions. One death

was due to exhaustion and two to perforation of intestines. No discrimination was made as to the physical character or class of the patients, nor as to the severity of the disease. Ninety-eight per cent. were characteristically prostrated by the malady, while but one was of the ambulatory type. The majority, in consequence of previous unfavorable surroundings, habits, or dyscrasiæ, had less than the average recuperative power.

Males preponderated, as only such are taken at the Alexian Hospital. It thus happens that one hundred and sixty were men, and only fifteen were women. The ages ranged from 14 to 50 years, the average being 25 years.

Prodromata in cases of this character are usually impossible to ascertain. The utter ignorance which is so often responsible for this malady and the carelessness which it involves renders patients and friends alike poor observers of the symptoms of the disorder. Questioning seldoms elicits anything satisfactory concerning the occurrence of epistaxis or even headache before an arrival at hospital; and reliance is only to be placed upon observations made after the admission of patients. Hence the phenomena of the initial stage may be disregarded, as statements made upon this head are untrustworthy.

Nor is it always practicable to ascertain the subjective conditions of the patients when stupor is a complication of their trouble. As near as could be determined abdominal tenderness was present in 15 cases; moderate tympanites in 29; tenderness with or without gurgling in right iliac region in 78; and troublesome sordes in 19. Epistaxis occurred in 40; vomiting in 14; diarrhœa in 95; constipation in 34; the remainder being irregular as to bowel movement.

The tongue coating varied as it usually does in the disorder, the frequent application of a mouth wash largely preventing the typical dryness and morbid accumulations upon the mucous surfaces. The maximum temperature in the cases that proceeded to convalescence was 105.5°; the minimum sub-normal being 96.5°: average stay in hospital thirty days.

In nine out of eleven relapses, the cause was directly traceable to disregard of the physician's orders concerning food or exercise. Usually indiscreet friends endanger the lives of the patients by smuggling indigestible edibles into the wards.

Careful notes were not made as to the typhoid eruption, but it was noticeable only in a very few cases. Splenic enlargement was frequent but variable.

The complications induced by the fever were as follows: complete aphonia 1; lobar pneumonia 3; lobular pneumonia 1; pleurisy 1; bronchitis, light cases, 3; vesical tenesmus 3; peritonitis 2; cervico-brachial neuralgia 1; hæmoptysis 1; hæmaturia 1; intercostal neuralgia 1; intestinal hæmorrhage 1; gastralgia 1; bed-sores 3.

The accompaniments of the typhoid fever were in some cases, intermittent fever 6, intermittent fever during convalescence 1, plumbism 2, arthritis 1, frontal head-injury 1, occipital head injury 2, hemicrania 1, alveolar abscess 1, acute conjunctivitis 1, spinal congestion 1, abscess of body 3, of larynx 1, of thigh 1, inguinal region 2.

The sequelæ were phlebitis 4, otitis media 2, tibial periostitis 1, parotiditis 2, suppurative phlebitis 1, suppurative periostitis of tibia 1, hemiplegia 1.

Delirium was marked in twenty cases; restlessness in

about one-third; while profound stupor occurred in but one. The mental disquietude bore no relation whatever to the pyrexia.

Antipyrin was used in place of the older methods of temperature, such as the cold-pack, salicylates and quinine. This newly-discovered and valuable agent was resorted to usually when a persistent rise toward 103° was noted, or when the discomfort of the heat, the exhaustion it induced, or other indication justified its exhibition. Copious diaphoresis usually followed its administration, and in several cases the eruption peculiar to the medicine followed. This eruption was noticed as occurring more often in those whose skin was softened and tender from in-door life. Laborers did not suffer in this way as much. In two cases this skin trouble began at the groin, extending upward over the abdomen and chest. As a rule the chest and arms were the locations of the outbreak. The dose usually given was fifteen grains, smaller doses of twelve and ten grains, at intervals of two hours or thereabouts, being given if necessary. The first dose, as a rule, was all that was needed to lower the temperature from two to four degrees, three degrees being an average.

A tolerance of the drug when ingested was associated with a greater reduction in temperature from the same dose. In one case the sweating was so exhausting as to prevent the further use of antipyrin, but the diaphoresis induced varies within wide limits and such idiosyncrasy should be regarded where it exists.

It is, of course, an undetermined matter as to just what dangers attend high temperature *per se*. It is not to be expected that it is the only element needing control in the patient's

behalf, but, so far as demonstrated by experimentation, the suppression of the pyrexia largely benefits the progress of the disorder. Antipyrin has, moreover, none of the disadvantages of the antipyretics formerly used. It is not irritating as are the salicylates; it does not congest the brain as does quinine, nor has the fatal supervention of exhaustion been recorded against it as against the injudicious use of the cold-pack or bath. It would be well, however, to observe the condition of the thoracic viscera, as any depressant may induce collapse. Beaumetz and others call attention to the styptic properties of antipyrin: and the claim is made that intestinal hæmorrhage is controlled more quickly through its use than by any other means. Stimulants are antidotes to the undue effects of the drug.

The frequency of the pulse was reduced while its force was not affected when antipyrin was given therapeutically, and the diarrhœa was noticeably checked. Cephalalgia observed in the course of high temperature, was also relieved.

The medicine exerts no permanent effect upon the temperature range, for the afternoon rise will occur the next day after treatment just as though nothing had been given, but this does not lessen its value in enabling us to control immediate conditions.

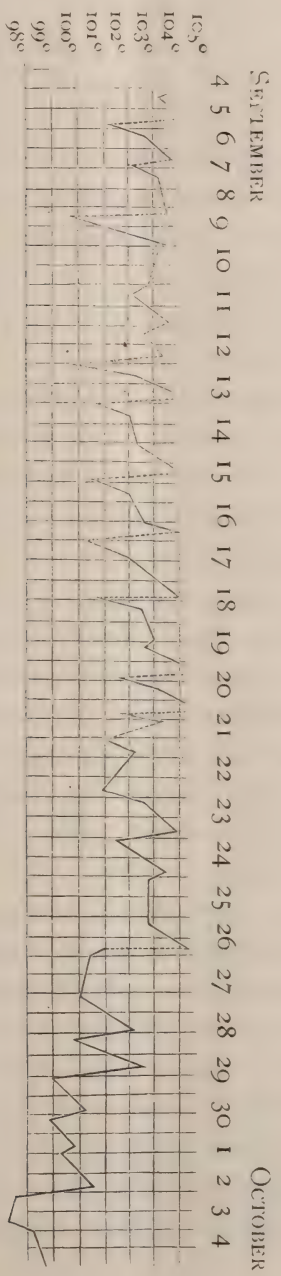
Quinine was given only in tonic doses and usually during convalescence. Stimulants were used to bridge over the period of waning strength of the patient. One case was brought to the Alexian Hospital in the fifth week of typhoid fever, and the patient was found to be suffering from profound cinchonism. As many as 30 grains of quinine had been persistently taken. Discontinuance of the quinine was all that was needed to restore him to health.

The temperature record of a female patient three days after entering the Michael Reese Hospital was as follows:

8.30 A. M.	103°	15 grains antipyrin.
9.30 A. M.	102.5°	10 " "
10.30 A. M.	101°	10 " "
11.30 A. M.	100°	
5.00 P. M.	103°	15 grains antipyrin.
6.00 P.M.	101.4°	10 " "
7.00 P. M.	99.2°	

In only one instance was the medicine rejected by the stomach.

A chart is herewith given of the daily range of temperature in a male case at the Alexian Hospital, the dotted lines indicating the reduction of temperature induced when the new remedy was used.


SEPTEMBER
OCTOBER
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4
105°
104°
103°
102°
101°
100°
99°
98°

OPIUM-SMOKING IN CHICAGO.

By CHAS. WARRINGTON EARLE, M. D., *Physician to the Washingtonian Home.*

[Read before the Chicago Medical Society, January 4th, 1886.]

The vices of the old world rapidly find their way to our shores, and along with alcoholic excesses, and opium-eating, and the cocaine habit, we find ourselves confronted by a new and, in some respects, a more fascinating vice, opium-smoking.

The narcotic properties of the juice of the poppy were known two or three centuries before the commencement of the Christian era. I am, however, without the proper data as to the time when crude opium, morphine, codeia, etc., etc., were first separated from it.

The practice of eating and smoking opium probably was introduced into China from Arabia. From China it was brought to California, and what we know of the bad effects of the drug has come from our western shores. Until the year 1868, opium-eating and opium-smoking were practiced and indulged in only by the Chinese. The first white man, a sporting character, smoked opium in California (1868). This, then, is the starting point in this country.

I find in looking over the reports, and particularly an article entitled "Number of Opium-smokers in China," from the *North China Daily News*, that it is estimated that about two millions of Chinese are opium-smokers, and although this evil is apparently so general, there is also a deep feeling among this numerous people that its use is doing a widespread and irreparable injury to their country. These people have come to this country bringing the habit with them, and in their own apartments and in sections of cities set apart for their habita-

tion, they carry on the vice, as they learned it and practiced it in their native land. Two millions of inhabitants of a country indulging in a habit of this kind seems terrible. It is terrible, but not to the extent which the figures indicate, for it is only two-thirds of one per cent. of the inhabitants—as the estimate of the population is 400,000,000.

A certain number of young men in our own country, Americans, with nothing to do, prostitutes, and young men and girls willing to try some experiment to make life somewhat more fascinating; or that class of people who appear to have no aim in life except to gratify some abnormal appetite, have come to learn and practice this habit.

My experience is with young men all Americans, I think, and all with capabilities which, if exerted in the right direction, would have enabled them to occupy a fine and, in one or two cases, more than an average position among their associates. They lacked early discipline, however, and contracted this with two or three other pernicious habits.

It was soon noticed by the authorities in California that the practice was extending, and efforts have been made to prohibit by law the spread of this vice. In California a law exists making every person who opens an establishment where opium-smoking may be carried on, or who resorts to these places, punishable either by fine or imprisonment. In Nevada, also, laws have been passed making this vice punishable by sentence to the penitentiary; and it is believed by the authorities that the evil habit has been in a very great degree checked by these very stringent laws. In our own city, during the last three or four years, the police have made various efforts to break up certain smoking dens, and have been in a very great degree successful. I am not prepared to say that much of this smoking is not now carried on in private apart-

ments. The Chinese smoking-dens have been almost entirely destroyed.

A smoker's outfit, which I now show you, is somewhat expensive, and the practice itself is one which costs a considerable amount of money. The pipe is from 16 to 24 inches in length, and consists of a bowl and stem. In addition there is a large tray, upon which is placed a lamp, several peculiar shaped knives and scissors for the cleansing of the pipe, and for the trimming of the lamp; a long needle, and a peculiar shaped box or can in which the opium is placed. The place where the opium-smoking is usually carried on is called an "opium-joint," and in this city we very frequently find the front part of one of these "joints" occupied as a cigar store or a laundry, the "joint" being well towards the rear of the establishment. If one is well fitted up there are several bunks or low tables, upon which are placed certain kinds of matting. One of my informants has seen eighteen people, male and female, smoking in one of these dens at one time.

As I remarked above, a place where opium-smoking is carried on is called an "opium-joint." One who is thoroughly under the influence and *must* smoke frequently is called a "fiend." The act of smoking with all its preparations is termed, "hitting the pipe."

The first "opium-joint" I ever visited was upon State street. A young woman had become addicted to this habit; and a gentleman, somewhat interested in her, appealed to me to visit her and if possible prevail upon her to place herself under restraint. I found the patient in one of those low wooden buildings on South State, near 16th street. A small cigar store occupied the front of the building, the second room being filled with gaudily dressed girls, more particularly of French descent, while back of this was a fairly furnished par-

lor, into which I was ushered. In the course of my conversation with this young woman and the gentleman who was interested in her, I requested to see the outfit for smoking, and if not particularly objectionable, to see them smoke. They very readily acquiesced, and repaired at once to an inner room, and went through the entire process of cooking and smoking opium. A low bed, rather luxuriously furnished, occupied one side of the room, upon which the gentleman placed the tray containing the outfit. Reclining on the couch, one on either side of the tray, they proceeded to cook and smoke the opium. My efforts at reforming this woman were not at all successful, and she declined placing herself under the treatment which I suggested. She died some months after in Cook County Hospital. My attention has, more particularly, been called to this vice by the following histories of men, who have become inmates of the Washingtonian Home during the last two years. Their ages, nationalities, occupations, etc., are briefly given.

No. 1. Age, 38; born in Tennessee, gambler by occupation, smoked for the relief of neuralgia since 1880. Was admitted on pretence of desiring to reform from alcoholic excesses, but in a few days confessed that he was an opium-smoker, and was placed under the usual treatment. In five days he was perfectly free from his opium-habit, and sent to the other side of the Home.

No. 2. Age, 28; born in Louisiana, bar-tender, commenced smoking in 1880. Was in the hospital six days when he was sent to the reformatory side of the house. He was discharged some days after for violating the rules of the institution, and is now tending bar and probably smoking.

No. 3. Age, 27; born in New York, son of a wealthy man and with nothing to do; smoked since 1880. While under

treatment did excellently well, and was sent to the reformatory with every prospect of a perfect reformation. He is known now to frequent a saloon whose attachés are opium-smokers, and presumably he is smoking.

No. 4. Age, 25; born in New York, telegraph operator; smoked opium since 1881. Several days after admission he was discharged from the institution for bringing whisky into the house.

No. 5. Age, 28; born in Pennsylvania, clerk; commenced the habit in San Francisco in 1878. Did well for several days, but finally was discharged on account of drinking.

No. 6. Age 26; American, telegraph operator; married. Up to seven years ago he was addicted to no habit. At that time he met with an accident, for which his physician prescribed morphine. During the year after his discharge by the physician he took the drug until he was using five grains daily. Six years ago he began smoking opium as a substitute for the morphine habit. He is now under treatment and seems determined to make a success. His wife, from constant attendance upon him and from assisting him in preparing his pipe, has become an *habitué*.

OPIUM-SMOKERS IN CHICAGO.

The exaggerated statements made by some of the victims in regard to the number of those practicing this habit, should be taken with the greatest possible allowance. Several years ago I made a very careful investigation in regard to the number of *opium-eaters* in this city, and 2,000 would be an outside number, and yet, within a short time, I have seen a statement in the public prints, telegraphed from New York, that over 25,000, including a large number of the better class of our people, fashionable ladies and the like, were using this drug.

There are no facts which warrant such statements. In regard to those smoking opium the number is very much less. One of my informants, who is well acquainted with all of the smoking-dens, and with a great part of those addicted to the habit, believes that 60 will cover all who are known to be opium-smokers in this city, and I have never had an estimate of over 200 made by those who are in the habit of exaggerating to the utmost. We must always take with great allowance any estimate made by the *habitué*, for inasmuch as he uses the drug himself he is convinced that everybody must also use it. This peculiarity is true of many drunkards. Concerning the class of people who smoke opium, we find that they belong to that crowd of people who are easily tempted, with very little to do, usually associated with some saloon-interest, prostitutes, and occasionally one who has failed in every kind of business, and seeks oblivion by the use of the pipe. We have not been able to find that any of the respectable class of females are in the habit of using the pipe, and the stories that wealthy ladies are driven to these dens in their carriages and seek solace and become fascinated by the use of this drug are absolutely false. I know of but two ladies who use the pipe. Coming now to speak of the symptoms produced by smoking this drug, we find that they may be fairly divided into two classes: Symptoms experienced by the new beginner of an exhilarating and fascinating character. 2d, The symptoms experienced by the "opium-fiend," or one addicted to the use of it in quantities, and who takes it for the obtunding of all his sensibilities. Concerning the effects of the first, I will quote from a writing of a physician, who in order to be a better judge of the effects of the drug, had every facility for smoking opium erected in his own office,—a most dangerous experiment it seems to me. He says: "The first effect was nausea and dizziness, accom-

panied by a pleasant sense of exhilaration, and followed by a quiet easy contentment. After a time there was an increase in the force and frequency of the pulse, giddiness, with slight nausea, and some staggering on attempting to rise or walk. There was a feeling of uncertainty in putting down the feet in walking, dazing of the mind, sleepiness, and heaviness of the eyelids. There seemed to be some trouble with the ears, and he commenced talking very loud." At first the pulse, temperature, and respiration are slightly increased, but after the drug has been smoked some time, they are lessened. During the commencing stage every one is quite certain he can give up the use of the drug at any time, but as time goes on he finds himself completely under its influence, enslaved to a demon whose power he cannot possibly resist. The quantity used as compared with a given quantity of pulvis opii, or morphia I am not able to ascertain. It is a kind of watery extract and looks something like a thick black molasses. Its effects are very similar, though less intense, to taking morphine by the mouth, and, after a very careful consideration of the subject, I have come to the conclusion that smoking opium produces less injury to the system than taking it by mouth. The cure for opium-smoking is much easier, and the patient experiences much less pain than when recovering from its use when taken by mouth or hypodermically. Opium-smokers do not have that haggard, pale look that we almost always find in opium-eaters. A man may smoke opium in a moderate degree for years, and not injure his physical condition; but mentally and morally it produces the most terrible results. He becomes melancholy and sees things in a way that casts a gloom over all his prospects. He becomes indifferent to business, careless in regard to all the responsibilities of life, and above all there is a tendency to prevaricate and

falsify, sometimes when there is absolutely no reason for so doing. Respiration and circulation, as I have already stated, are slightly increased during the first stage, but lessened when the person becomes thoroughly under the influence of the drug. There appears to be, when the *habitué* becomes entirely under the influence of the drug, a lessening in regard to the sexual appetite, but seminal emissions are frequent. During the interval of smoking or during the slight period of exhilaration, the sexual appetite is increased, and taking knowledge of this fact, it is claimed that a certain number of girls have been ruined by those knowing the peculiar desires and inclinations when partially under the influence of the drug. The use of the drug by smoking produces constipation and hæmorrhoids, the same as we find when taken by the mouth, or hypodermically, although all the symptoms are less intense. Upon its withdrawal we find sneezing, running at the eyes, dizziness, noises in the head, diarrhœa, muscular pains and insomnia present in a large number of cases. There is, however, but little suffering experienced by one recovering from this vice, compared with the sufferings endured by one who has been an opium-eater. Little medication is needed, but these persons must be under restraint, and must be under the control of one who is firm, and who under no circumstances will believe what they say. A few days in a room well warmed, that has all the conveniences of bathing, with cocoa, and avena sativa—nerve sedatives—and tonics, with a fluid diet, will bring a person to where he can commence to build up his mental and moral status. He is now in a condition in which he may commence to reform if he so desires. I have never yet met with a case which I can

say was cured, or with a case that I believed was hopeless, or one who, I believed, could not reform from opium-smoking if he desired. These people will not accept the conditions necessary for a cure. The great trouble is that they are so oblivious to all the responsibilities of life, and so willing to become wrapped up with the exhilarating effect of this drug, avoiding all the troubles, pains, and responsibilities of life, that they cannot be brought to see that it is a duty both to themselves and to their friends to stop the habit. In addition we find a certain class of people who are willing to coddle, and treat these men and women for a disease; are willing to excuse them for the terrible train of symptoms which they have brought upon themselves, and which they insist upon retaining. In this way we are thwarted from bringing about good results, which might be produced.

REPORT OF A CASE OF HYDATIFORM PREGNANCY.

By E. J. DOERING, M. D.

[Read before the Chicago Gynæcological Society, Jan. 15th, 1886.]

Hydatiform pregnancy, or more correctly designated cystic degeneration of the villi of the chorion, is of such rare occurrence and possesses so much clinical interest, that a report of a case of the kind which recently occurred in my practice, will, I am confident, be of interest to the Fellows of this Society.

The etiology of this affection is still unsettled. Virchow attributed it to a morbid condition of the decidua; others to a morbid maternal condition, while Hewitt believes it follows the death of the fœtus, from what-

ever cause, the chorion remaining attached to the decidua, and stimulated by the "energy of growth" developing into a vesicular mole. This latter view has some foundation in the fact, that as a rule no trace of the fœtus can be discovered.

"The degeneration of the villi of the chorion generally commences at an early period of pregnancy, before the placenta has commenced to form. The epithelium of the villi appears to be the part first affected, and the whole interior of the diseased villi becomes filled with cells. The connective-tissue of the villus undergoes a remarkable proliferation, and collects in masses at individual spots, the remainder of the villus being unaffected. By the growth of these elements the villus becomes distended and many of the cells liquefy, the intercellular fluid, thus produced, widely separating the connective-tissue, so as to form a network in the interior of the villus. Thus are formed the peculiar grape-like bodies which characterize the disease. When once the degeneration has commenced, the diseased tissue has a remarkable power of increase, so that it sometimes forms a mass as large as a child's head, and several pounds in weight."—(*Playfair's Midwifery.*)

The attachments of the vesicular mole to the uterus vary. Schroeder reports a case in which the vesicles penetrated throughout the uterine wall to the peritoneum, and Dr. Tyler Smith saw a similar condition, which led to a rupture of the uterus during the expulsive pains. By reason of the rapidity of the growth and the great distension of the uterus, expulsion of the mass generally occurs between the fourth and sixth months. The mass is usually expelled piece-meal, accompanied by profuse and exhausting hæmor-

rhages, thus exposing the patient to all the dangers of septicæmia and rendering the prognosis in any case doubtful.

The symptoms of a hydatiform pregnancy, such as rapid increase in the size of the uterus, a doughy sensation to the touch, general malaise, etc., are all uncertain and misleading, and practically it is impossible to make a correct diagnosis until portions of the vesicles are expelled, as in the following case:

Mrs. W. D. P., a cultured lady, of slender physique, 21 years of age, was attended by me in labor fifteen months ago, and delivered by instruments of a healthy boy weighing ten pounds. Her general health has been good. She has had no miscarriages either previous to or since the birth of her child. Her last period occurred during the latter part of October, 1885. During the month of November the catamenia remained absent, which she attributed to a cold, the idea of pregnancy not occurring to her, as she had none of the usual symptoms. During the month of December, and particularly during the week preceding the holidays, she was on her feet constantly, although not feeling well, having sensations of chilliness, followed by a feeling of heat and general depression. On the Sunday before Christmas a slight and painless flow of blood commenced, believed by her to be the period, now four weeks overdue. The flow continued several hours and then ceased. On Christmas day, while seated at the dinner-table, she was suddenly attacked with a profuse hæmorrhage, the blood saturating the floor, and continuing until a degree of faintness was produced, in which condition I found her on my arrival a few minutes afterwards. The hæmorrhage, which had been entirely without pain, ceased suddenly. A careful examina-

tion confirmed my suspicion of pregnancy, although I was much surprised at the size of the uterus, corresponding to a four and one-half months' pregnancy, the fundus rising nearly midway between the symphysis pubis and the umbilicus. There being no further hæmorrhage, no pain and no dilatation of the os, an expectant plan of treatment was pursued by instructing the patient to keep in bed, enjoining absolute rest, and giving her a few doses of morphia. On the following night another hæmorrhage occurred, but of not much consequence, and requiring no interference. Two days later, on the morning of the 28th of December, another hæmorrhage took place, more copious than the last one, but still unaccompanied with pain. An examination showed slight dilatation of the os, but not sufficient to permit the recognition of the contents of the uterus. As the patient was beginning to show decided symptoms of anæmia, the vagina was tamponed and ergot administered to check the hæmorrhage and favor uterine contractions.

Uterine pains soon commenced, accompanied by considerable hæmorrhage ; the os dilated fully one inch, the presenting part giving the sensation to the finger of a blood-clot. This was soon expelled in detached portions, and on removal from the vagina was readily recognized as a hydatiform mole, having all the characteristic appearances of a grape bunch, composed of a mass of translucent vesicles, about the size of currants, containing a clear limpid fluid. After inserting two fingers into the uterus and emptying it as thoroughly as possible of all the diseased tissue, the hæmorrhage promptly stopped. The entire mass removed equalled about the size of a large orange. Some febrile reaction occurred, but for several days the temperature did

not exceed 100½° and the pulse 95, the treatment consisting of quinine and ergot, internally, and the use of uterine and vaginal injections of carbolized water.

On the beginning of the fourth day the patient was suddenly seized with a severe chill, followed by the usual symptoms of septic poisoning, high temperature (104½°), rapid and feeble pulse, superficial respiration, great tympanites, thirst, vomiting, and arrested lochia, with no pain or tenderness over the abdomen. The outlook was anything but promising, but the prompt administration of large doses of quinine, combined with diaphoretics, turpentine stupes, warm fomentations, and the continued use of antiseptic injections was followed by the most gratifying results, and, after four days of great anxiety, the patient had recovered sufficiently to be declared out of danger. At the present time, eighteen days since the expulsion of the mole, the patient is up and about the house, with a good appetite and making preparations to leave in a week or two on a journey to the south.

2406 Prairie Avenue.

ON THE AFFECTIONS OF THE SKIN INDUCED BY TEMPERATURE VARIATIONS IN COLD WEATHER. (Second Paper.) *By* JAMES NEVINS HYDE, M. D., *Professor of Skin and Venereal Diseases, Rush Medical College, Chicago.*

In the early part of last year* I had the opportunity of writing and publishing a paper on the general subject suggested by the title given above. It is here purposed to supplement that former communication, by touching upon certain points con-

*CHICAGO MEDICAL JOURNAL AND EXAMINER, March, 1885.

nected with the same theme, that were then omitted chiefly in consequence of lack of space.

For those who are not familiar with the field then surveyed it may be well to note that the subject was introduced by reference to the great prevalence, in the region known as the Northwest, of a class of cutaneous disorders accompanied by pruritus in various grades, and occurring under the influence of temperature-variations in cold weather. It was shown that, while it was comparatively easy to persuade the victims of these disorders as to the actual cause of their trouble when only exposed portions of the body were affected, as for example, in the case of frostbitten hands and feet, it was on the contrary found to be difficult and almost impossible to compass the same end when the climatic influences were exerted upon those portions of the body covered by the clothing.

It was also pointed out that these climatic influences resulted in the production upon the skin of different individuals, of different symptom pictures; one large class of sufferers experiencing only a cutaneous pruritus (the "pruritus hiemalis", of Duhring; "winter prurigo", of Hutchinson) the sole eruption occurring as the result of the traumatisms of scratching; and the characteristics of such pruritic skins whether free from eruption or wounded by traumatism were fully enumerated. The several forms of erythema, eczema, urticaria, and furunculosis, resulting from the same causes, namely, sudden temperature-variations, were also described.

It was further stated that most of those holding erroneous opinions respecting the nature of these disorders, could be divided into two classes, viz., first, those entertaining the view that these disorders were parasitic in character; second, those believing that they were due to certain morbid conditions of the system, best recognized under the popular phrase "impu-

rities of the blood." The arguments against both of these conclusions were somewhat fully set forth, the first doctrine being tested by a detailed account of the several points of resemblance and difference between the winter disorders of the skin and scabies, or "the itch."

Attention was directed also to the fact that the acarius scabiei, though requiring an objective of low power for display of its anatomical features, is visible to the naked eye. As I write these lines, I hold before my eyes, whose myopia is corrected for normal vision, a slip of glass to which is attached the body of an average sized female acarus. With the out-door snow for a back-ground, the minute disk of the parasite is visible at a distance of twenty-five inches from the eye; and a medical friend who chances to enter the room at the moment, succeeds in accomplishing the same feat with ease.

Before pursuing this inquiry further I purpose to exhibit some evidence showing the frequency of the disease in certain of the Northwestern and a few of the Southern States of this country; and also the grounds for believing that the group of disorders which here especially concerns us, is of relative infrequency in other parts of the world.

The following extracts from some of the private letters addressed to the author by medical correspondents since the publication of his first paper on this subject, may serve to illustrate the first part of this proposition:

"————, Ill., March 29th, 1885.

"Scabies has existed in this community for about two years, "and is treated here with very little success. Many patients "have suffered for six months before securing relief. I think "there is no doubt as to the nature of the disease.

"Yours very sincerely,

"———— ————."

In this connection it should be noted that the length of time during which some of these patients suffered from the supposed scabies, is that of the cold season in this part of the country.

"————, Ill., Mar. 27th, 1885.

"I have a case of skin disease of the most perplexing char-
"acter. The patient, a middle-aged lady, is otherwise in the
"best of health. Her sole trouble is an intolerable pruritus
"involving every portion of the body. No eruption can be
"seen. Brisk friction of the surface produces a deep mottling
"of the integument, with partial relief of the itching. I have
"had several similar cases, most of them in men, and the treat-
"ment in all has been very unsatisfactory. The little son and
"daughter of the lady whose case is mentioned above, were
"the only children found to be affected, of some ten or twelve
"cases. The mother thinks she caught it from the children.
"No two of the other cases occurred in one family. All were
"in excellent health and complained only of the itching. I do
"not believe that it is contagious.

"Yours truly, "————."

"————, Ill., Jan. 2nd, 1885.

"There is a form of scabies in this community which does
"not yield to the ordinary treatment by sulphur, etc. Can
"you kindly suggest anything that is capable of curing the
"disease?" "————."

"————, Iowa, Oct. 30th, 1885.

"I have suffered myself from a very disagreeable attack of
"itching of the skin which has lasted for about two weeks,
"existing particularly upon the arms, body, and the inside of
"the thighs. It scarcely troubles me in the daytime, but is
"always much worse at night, after retiring to bed and getting
"in close proximity to a hot fire. I have treated within the
"last year between two and three hundred cases of this disease
"and I believe that most of them have recovered in the course
"of a month. It seems to prevail here as an epidemic.

"Very respectfully yours,

"————."

To this writer, as indeed to all who have sent communications upon the same theme since my first presentation of this subject, a reprint of that first paper was mailed. In consequence, however, of the large experience reported by this correspondent, a letter of specific inquiry was also sent him which elicited the following answer:

"————, Iowa, Nov. 25th, 1885.

"About three years since and at a time when a large force "of laborers was employed on the railroad here, many of them "were affected with a disease of the skin attacking the chest, "sides of the trunk, and arms, characterized by an intense "pruritus with decided nocturnal aggravation. In about two "weeks, about a dozen of these cases were effectually relieved. "After an absence of two years, I returned one year ago to "this place, and found nearly the whole community affected "with what they called 'the itch.' I have since treated be-"tween two and three hundred cases of it and have usually ob-"tained complete relief in from ten to thirty days. I had pa-"tients from all the surrounding towns, some of whom had "been under treatment for two or three months without re-"sulting good.

"A few days since, a day laborer was found dead in his "shanty in the outskirts of this town. Upon removing his "clothing at a coroner's inquest, the entire body was found "covered with a crust surmounted by scales which were nearly "as thick as sole leather. This man had probably suffered "for over two years and presented a picture of the full evolu-"tion of the disease in an untreated case. I do not like to dis-"agree with your opinions, but I must express my belief that "the disease is highly contagious and that its extension in the "community is due far more to this fact than to any atmos-"pheric influences. There is no doubt that a parasite is the "cause, for I have examined both parasite and ova nearly every "day with a glass. I have had it myself four times in the past "year. Certainly no man can pay more attention to personal "cleanliness than I. Even discarding the flannel undercloth-

" ing that I have always worn, has failed to afford me any re-
" lief whatever. We have had here a few cases of genuine
" scabies but they scarcely ever come under the observation of
" a physician, as sulphur and lard soon put an end to them.

" I am with very high regard, etc.,

"_____ _____."

To this note an answer was returned begging for a full description of the parasite and its ova; the power of the glass used for its recognition, and a statement as to the habitat of the parasite, whether it burrowed within the skin, or lived upon its surface, or upon the investing clothing.

To this no answer was returned.

"_____, Wis., Oct. 8th, 1885.

" I have a patient 63 years old, in excellent general health,
" who has no eruption upon the skin but who, since the first
" of August, has suffered from an intolerable pruritus, with
" considerable aggravation upon retiring to bed at night. The
" result is an insomnia which is exceedingly distressing. The
" sensation of itching seems to be worse on the forearms.
" Other members of the family are affected with the same
" disease.

" Yours very sincerely,

"_____ _____."

"_____, Wis., Nov. 5th, 1885.

" I wish to inquire about a form of skin disease to which my
" attention has been frequently called during the past year.
" It rages in the camps of the lumbermen; in one instance
" twenty out of thirty men being affected by it, as also a num-
" ber of families where the husband and children suffered if
" not the wife. I have now a merchant under my charge, aged
" 40, whose 5-year old boy has had it and recovered without
" treatment, the wife escaping though, of course, exposed. The
" itching is simply atrocious. Objectively, papules and some-
" times pustules occur upon the extensor surfaces of the limbs.
" I have never found any eruption upon the inter-digital spaces.
" The papules are smaller and more discrete than those in sca-

"bies, and do not yield to sulphur. The patient now under "treatment has the eruption upon the extensor surfaces of the "forearms, scarcely any on the arms; in and about the ax- "illary region; where the waistband of the trousers comes in "contact with the skin; the popliteal spaces; the extensor "faces of the legs; and a few pustules over the thickened pal- "mar integument near the forearm.

"On the anterior surface of the wrist, and also in the palm "of the hand there are two or three pustules; none in the in- "terdigital space. I don't believe this is scabies. I regarded "it as a form of eczema, and treated it accordingly without "success, until I was forced to admit the contagiousness of the "disease, and to adopt anti-parasitic treatment, which, as a "rule, arrested it.

"Is there now recognized, or has there lately been recog- "nized a new parasite, which could be regarded as capable of "producing this disorder? I notice that a writer has lately "claimed that such is the case, particularly in Ohio and the "Northern and Western States. In the lumber districts it is "commonly called 'camp itch,' and other names as little sig- "nificant of its real nature.

"Yours very truly, "————————."

"————————, Wis.
Nov. 11th, 1885.

"*My Dear Sir:*—I have read very carefully the reprint of "your late paper on 'Winter Disorders of the Skin,' and "after a careful perusal of the same I am almost persuaded of "the truth of your position. The question of contagiousness "is not yet settled in my own mind. When the disease first "came under my observation I regarded it as contagious, "but afterward, as a general eczema due to temperature "changes, until cases occurred in families, where the father, for "example, was the inmate of a lumber camp, became infected, "and immediately after a visit to his family, whose children "were also attacked. The belief is universal that this disease "is contagious.

"Yours very truly, "————————."

The following is an interesting communication, on account of the fact that it comes to us from a point much more to the South than any of those heretofore noted.

"————————, Tex.

Nov. 20th, 1885.

"*My Dear Sir:*—Will you kindly give me your opinion of "the following case: A gentleman, 26 years old, and married, "came to me affected with a peculiar itching of the skin over "the iliac crests, extending directly up to the axillæ, and down "to the flexor surface of the arms; no lesions became appar- "ent over the surface until after the skin was scratched, at "which time small wheals appeared. In about a month the "thighs and legs were also affected, and finally the entire "upper extremities, and the body. No treatment has thus far "proved effectual in relieving the pruritus, which is especially "intense at night, and up to the present date has continued "quite unabated.

"Yours very truly,

"————————."

Upon reading this communication, the reprint, to which reference is made above, was mailed to this gentleman, on the supposition that at that season of the year his patient had been subjected somehow to the same influence as others described in this paper. In response I received a communication from him, stating that the patient had been exposed to the action of severe cold in a trip which he had lately made and that after his return to a warmer climate the disease had entirely disappeared.

"————————, Wis.

Jan. 5th, 1886.

"*My Dear Sir:*—I am constantly seeing patients who apply "to me complaining of a severe itching of the surface of the "body, particularly when they are warm, and lying in bed. "On examination the skin may present some small nodules. "The skin is not swollen or reddened, but feels to the touch,

"and is also subjectively, hot and dry. The patients are very apt "to scratch the skin until pin-head-sized nodules appear upon "its surface, which when torn, are covered with spots of dry "blood at the apex of each nodule. Some patients are affect- "ed only upon the arms and legs. Others have it extensively "over the entire surface of the body. Both the flexor and ex- "tensor faces of the limbs are affected. I have not yet seen "the eruption occurring on the feet, hands, face, or genitalia. "Adults, as well as children, are affected. Almost all are male "patients. Some patients have the affection for several years; "others for only a few months or weeks. The health of none "is impaired in the slightest degree. I am quite uncertain as "to the diagnosis. No treatment seems to give relief. The "population here is largely made up of farmers, who eat a "great deal of fat at the table, and most of whom work very "hard. I shall be obliged if you will give me your opinion "upon this question.

"Yours very truly,

"_____."

"_____, ILL.

Dec. 24th, 1885.

"*My Dear Sir:*

"In our vicinity there is a 'lichen,' 'itch,' 'mange,' "'scratches,' or something which affects a large number of "people. It is characterized by itching, which is more in- "tense on going to bed at night. The eruption is of the "papular variety, and situated mostly on the extensor "faces of the forearms, the thighs, the breast, and the abdo- "men. My treatment has been anything but satisfac- "tory. I am a young man just beginning the practice of "medicine, and wish to get all the information possible on "the question. You will very much oblige me by giving "me the diagnosis and treatment of this disease.

"Yours very truly,

"_____ _____."

Thus much for observation of this group of diseases occurring more particularly in this country. Turning to other countries we are at once struck with the fact that there is almost absolute silence on the part of writers and observers, respecting the prevalence there of such disorders. My paper published last March awakened some attention in England, France and Germany, as brief abstracts of it appeared in the medical literature of those countries, which contained, for the most part, the essential points it presented.

Glancing somewhat hastily over dermatological literature for the year 1885, I have discovered but few references to the disorders under consideration. In the *Annales de Dermat. et de Syphilig.*, for January 25th, 1885, appears an abstract of a paper by Obersteiner, originally published in the *Wien. Med. Wochenschr.*, No. 16, 1884. In this paper is described a case diagnosticated by the author as one of pruritus hiemalis of Duhring. The mere fact that observation of a single case is recorded, alone suffices to suggest its rarity, even if the author did not himself admit, as he does, that it has not been possible to recognize it more often as occurring in the latitude where he is engaged in practice. Obersteiner's single case was that of a young man, 37 years of age, of vigorous constitution, who regularly, every month of October, suffered from a violent pruritus, greatly aggravated in the course of the ensuing winter and disappearing almost entirely in the spring, usually about the month of March. The maximum intensity of the symptoms was noticed at night. Almost all treatment proved useless. The general health was unimpaired, but the sensibility of the integument was greatly exaggerated

during the period of access. He notes two points: First, that variations of temperature must be largely responsible for the disease, even excluding severe cold, since his patient lived in Cairo, a point far to the south of Philadelphia, where Duhring first wrote his paper. Second, that the disease is to be regarded as a neurosis, whatever its cause, in view of the fact that his patient found his symptoms influenced by moral emotions. Obersteiner adds that a large number of physicians are reported to have observed the same disease in Austria, but that he does not regard the condition which they describe as identical with the pruritus hiemalis of Duhring.

Turning to the text books written by foreign authors we find descriptions of the group of disorders under discussion in the highest degree meagre and unsatisfactory. Many such make no note of it whatever; others do little more, as for example, Schwimmer, in Ziemssen's Hand Book of Diseases of the Skin, who devotes a single paragraph to the subject, a brief reference in fact to the existence of such a disease in America.

Interesting verbal communications made on the same subject to the writer, by prominent dermatologists and physicians in this country, indicate, as might be expected on *a priori* grounds, a divergence of opinion. Some of both classes are quite confident that a rather larger percentage of scabies is to be credited to the group of disorders here considered, than is represented by the percentage given in the statistics gathered by the committee of the American Dermatological Association. These statistics, however, continue to bear the same testimony upon the point at issue. In the year ending June 30th, 1884, there were three hun-

dred and thirty-nine cases of scabies reported from the several districts, thirty-three occurring in private, and three hundred and six in public practice. At that time, Boston reported one hundred and seventy-nine cases, the percentage of that disease to all cutaneous diseases coming under the notice of the reporters of that district, being ten per cent.

During the succeeding year ending on the 30th of June, 1885, there were four hundred and forty-two cases of scabies reported from the several districts, of which forty-nine occurred in private, and three hundred and ninety-three in public practice. This year, also, Boston exhibited the largest increase, reporting three more than one-half the entire number of cases of scabies registered in the country, viz., 224. It thus appears that the statement made in my former paper still holds good, namely: that it is the cities on the American sea board which are, as a rule, able to report the largest number of cases of scabies in the country; that the cities of the interior must usually furnish a considerably smaller number; and that the towns and villages of the Northwest and West will always suffer less from scabies, than will any other localities in the United States. The most significant exceptions occur where a larger or smaller number of newly-arrived immigrants have produced by settlement a focus in which also a colony of acari have been imported directly from the old world to the new.

But acari and atmospheric influences aside, is it possible that a parasite, hitherto unrecognized and undescribed, works the extensive mischief to which attention has been directed in these papers? Upon this point it is needful to speak with the just reserve based upon all the possibilities of the future. One of the most distinguished observers in this country lately in-

formed me that he had been in correspondence with a gentleman who seemed to have discovered a parasite as the cause of a curious eruptive disorder, similar in character to those described above, and found particularly in Ohio. While ready, however, to admit the truth of all demonstrable facts, present or future, we are in position to-day, to assert that the disorders we have considered, when tested by the standards according to which all contagious diseases of man and animals are proved to be such, fail of conformity in every particular. All the accumulated facts relative to contagion in the winter diseases of the skin, are explainable by the exposure to the same influences at the same time of large numbers of people in a given community, who, it is to be noted, are simultaneously relieved as well as attacked in atmospheric temperatures above or below a certain point.

As to the title or titles which should be given the disorders described above, it remains only to be said, that they must be for the present designated by descriptive terms merely. They constitute a group of affections, for the most part simple in character, the sole reason for their discussion in group, being an etiological one.

The terms "pruritus hiemalis," and "winter prurigo," unquestionably point to the prominent affection in this class, which, however, as I have endeavored to show, exhibit a very wide range of features from pruritus without eruption, and pruritus accompanied by an eruption solely induced by traumatism to extreme grades of inflammation of the skin, characterized by every one of its inflammatory lesions. The recognition of the causes of a disease does not justify the setting of that disease aside in a special category of its own. Pruritus is pruritus, whether induced by a parasite inhabiting the skin, an indigestible aliment in the stomach, or the action of cold upon the

outer surface. If need be, for the purpose of convenience, a term may be added referring to its chief etiological factor, which in the present case is the cold weather of the spring, of the fall, or of the winter; or, as has been shown in a previous paper, the relatively sudden changes of temperature from the higher to the lower degrees or the reverse, in any season of the year.

We now turn to the question of treatment:

A perfect prophylaxis and remedy are naturally secured by residence in a climate not subjected to the rapid changes which are experienced in this latitude. When the disease, in any one of its forms, has been pronounced, a removal to such climate is invariably succeeded by a more or less speedy relief of all the symptoms. In touching upon this subject, it is natural that I should refer chiefly to cases seen in Chicago and its vicinity. Patients resident in what is known as "the Upper Lake Region," who have been able when thus afflicted to spend a few weeks in St. Louis, Philadelphia, New York, Baltimore, or at points equally distant from their homes and in similar directions, have usually reported very marked relief within two weeks, and complete recovery in a somewhat longer period. Nor can it be said that this is a merely temporary benefit, for in several cases patients, who, after such residence in other parts of the country, have returned to that in which they first experienced their disagreeable symptoms, have either not suffered from a relapse, or have had the same symptoms occur in a milder form. In general it may be said that the Eastern, South Eastern, extreme Western, and Southern coast line, with some proximity to the sea even in winter, has offered a climate most propitious for securing the desired end. It cannot be said that such relief can be obtained with any degree of certainty in any one of the States forming the Upper

Lake Region, and this, of course, applies equally to the various springs and health resorts in these same limits. Neither can it be said that the method of exposing the skin to the action of heat and hot water, in the Turkish or Russian baths of the large cities, or of the baths in the various Hot Springs that are accessible in the region here defined, can be relied upon for securing the desired result.

It will always be true, however, that the majority of patients who consult physicians will demand what relief is possible for these ailments while they are attending to their business, in the localities where they reside. The problem in these cases is a very great one; it may in fact be described as the great dermatological problem for solution in this part of the world. At times with great ease and brilliant results, at others in the face of disagreeable drawbacks and relapses, the therapeutical solution is always reached in one way or another by clumsier agencies than those exerted by the sun as it nears the summer solstice.

Whatever be the condition of the skin, the following remarks, in regard to the general management of these cases, may be regarded as important. The patient should wear soft, undyed, and unirritating garments next to the skin. Woolen garments, especially those which are highly colored by aniline dyes, and even undyed woolen garments of every sort, should not be worn. Nor can it be said that silk underwear offers any guarantee against pruritic discomfort. It is preferable to wear soft, white, lisle-thread garments next the skin, and outside of these, as may be required by the temperature of the outer air and the vocation of the patient, warm, woolen, or other clothing, necessary to maintain a comfortable bodily temperature.

Patients in this condition should also avoid all ingesta that

are capable either of producing or of aggravating cutaneous rashes or pruritic symptoms. Here may be named, among medicaments, arsenic in every form, the salts of iodine and bromine, senna, quinine, chloral, valerian, glycerine, opium, and all remedies which are popularly supposed to "drive out" eruptions upon the surface of the skin, including, of course, every one of the so-called "blood-purifying" remedies.

Among articles of diet it is scarcely necessary to say that oatmeal, which is such a common food in this country, as also wheaten grits, pease, beans, etc., should be avoided. Buckwheat and other hot cakes, pastry, pickles, vinegar; such uncooked vegetables as celery, cabbage and cold-slaw; several of the preserved fruits, including strawberries, gooseberries, and raspberries; all canned fruits, canned meats, and canned vegetables; mushrooms and spinach; salads of all sorts; nuts, raisins, figs, dates, prunes, olives and the skins of grapes; tea, cocoa, and coffee; cheese and sausage; paté de foie gras, Caviare, and Welsh rarebit, game, and all salted, canned, and preserved meats; shell fish, especially lobsters, crabs, and clams have all produced pruritic affections. Fresh oysters in season, and oyster broths are not, however, as a rule, objectionable. Fried meats, fried fish, and fried vegetables are in general to be avoided. Wine, spirits, and beer are not permissible as beverages.

It is evident to any one who carefully examines this list that articles are left unnamed from which an ample dietary may be selected for even an active worker. Thus, one can permit the use of all animal and vegetable soups and broths, without free fat floating upon the surface; fresh, roasted, boiled, broiled and baked meats; poultry; fresh, broiled, boiled, or roasted fish; fresh, cooked vegetables, when not of the class named above; stale wheat bread, eggs, milk, and cream; fresh

butter; olive oil as a dressing, fresh fruits, the simple puddings, such as custard, rice, tapioca, and bread puddings; blanc mange, charlotte russe, ice-cream and omelettes.

Tobacco, both by smoking and chewing, is, in the case of male patients, to be interdicted as liable to sustain, if not induce, the irritability of the nervous system which constitutes such a prominent feature of the diseases considered.

As far as possible the patient should avoid extremes of temperature, more particularly at those periods of the day when the pruritus is at its worst; as for example, when the clothing is removed from the body at night, and also when it is replaced in the morning. Unnecessary exposure in an open carriage, or sleigh, should be avoided as liable to awaken the paroxyms of the disease.

It cannot be said that any remedy can be administered internally, which will specifically "cure". The internal treatment of this group of ailments is to be conducted on the general principles by which the physician is guided in the treatment of other simple disorders. Thus, for example, constipation, which is so frequent in the winter season, on account of the necessary restriction of the diet at that time, may be relieved by one of the simple laxatives, such as the mineral waters, the compound licorice powder, or the compound cathartic pill.

In many cases, when the nervous system is suffering greatly from nocturnal paroxysms of distress, a full dose of quinine at night, even though contra-indicated in most cases, taken on retiring to bed, and followed by a cup of warm milk in the morning before rising, will secure very marked results. Other indications are to be met as presented in the case of individual patients.

The local treatment is a matter of prime importance. In the severest cases it is unquestionably necessary to use the

hot bath. While it is understood that in general too much bathing is prejudicial to the management of the disorders under consideration, the hot bath is often needed, especially when the patient presents acute inflammatory lesions, raw, tender and torn papules, and infiltrations on the inside of the thighs, the lower belly, and about the knees and forearms. The bath is best taken at night and without soap. To each quart of hot water a teaspoonful of one of the alkalies is added, such as the bi-carbonate of sodium, or the biborate of sodium, or both. After the bath the skin is to be not rubbed, but patted dry, with warm, freshly laundried towels, and a soothing unguent applied. In all cases where it is possible, it is better to not only anoint the surface of the skin with the salve, but to spread the latter upon strips of muslin, to the thickness of a knife blade, which pieces are smoothly applied to the surface, and lightly bandaged, in situ, with a cheese cloth roller. This of course is more applicable to the extremities than to any other portions of the body; as for example the thighs and the forearms. Any of the simpler salves may be used for this purpose, but that which can be most trusted to accomplish the result in view, is some modification of the long known and still popular unguentum diachyli albi, of Hebra,* which has been called "the prince of ointments."

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*℞.

Olei olivæ (opt)	℥xv.
Lithargyri (opt)	ʒiii et ʒ vi.
Aq. font.	q. s.

Mix the oil with a pint of water; heat in steam bath to boiling. Sift in the litharge in finely powdered state; stir continually, and boil till all particles have disappeared. Add water occasionally and stir till cool. Immediately after made, unite with equal parts of vaseline. Otherwise, the ointment must be freshly prepared whenever required.

This salve may be mixed with equal parts of vaseline and cold cream, and to each ounce of the whole may be added from five to fifteen grains of salicylic acid, the whole forming a compound which usually affords a great deal of comfort to the surface.

In place of this, the soothing salves, containing bismuth, creta preparata, and the oxide of zinc may be employed. A very useful formula is the following:

Oxide of bismuth 3i
Oleic acid.....ʒi
White wax.....3iii
Vaseline.....3ix
Oil of roses.....ɱii

M. S. A. [Anderson.]

In many cases however, the skin is in a state of such high inflammation that a still more soothing method of treatment must be pursued. In these cases it is exceedingly useful to adopt the plan to which resort is often had in the management of acute eczema. A lotion of the kind indicated in the following formula is thoroughly shaken up in its vial, poured into a cup or saucer, and then daubed over the part with a mop made of rags, rather than with a sponge, which only serves to entrap the insoluble portion of the lotion:

Creta preparata 3i
Oxide of zinc 3i
Dilute hydrocyanic acid.....3ss
Glycerine.....ʒss

Lime water and elder-flower water each Oss.

While this is daubed over the surface with one hand, the other is employed in gently rubbing into the skin one of the soothing ointments already described. By one or more of these means, the patient can be usually relieved to an extent

sufficient to ensure a comfortable night. In the morning, one of several courses may be pursued. Either the patient remains in his room, which should be heated to a barely comfortable temperature, ranging from 68° to 72° Fahrenheit, and remains there smeared with his salve dressing, practically as he was during the night; or if he or she must necessarily atttend to the active employment of out-door life, the skin is lightly anointed with one of the salves, and then over it is dusted one of the powders which are used for that purpose. Inasmuch as a large portion of the skin has often to be protected in this way, the powder selected should be exceedingly fine, soft to the touch, and comparatively inexpensive. Few are better than the Oswego Gloss Starch which is sold by the grocer, though the several dusting powders used in medicine may be substituted for it in order to induce a greater anti-pruritic effect; as for example combinations of talc, salicylic acid, camphor, oxide of zinc, starch, Fuller's earth, and lycopodium.

Dr. Faithful, of Australia, has recently suggested a new method of preparing medicated powders for skin affections of this class. The remedy is first dissolved in alcohol, ether, or chloroform; the solution is then mixed with starch, or French chalk, and the menstruum allowed to evaporate. The evaporation is conducted without the aid of heat, and a fine medicated starch or chalk powder remains.

In many cases one or more of the lotions esteemed in the management of pruritus in general can be here also employed with advantage. Some of the formulæ of this class are suggested in the appended note.*

* Lotions containing the tars (ol. cadini, ol. fagi, ol. rusci) and carbolic acid, one to two per cent.; naphthol solutions, three to five per cent.; *e. g.*, ℞. ol. rusci ʒ iiss, glycerin., ʒ v, spts. vin. rect., ʒv, lavend. spts., gtts. xx. M.

In the milder forms of this group of affections less elaborate local treatment may be adopted. Thus for example, the bathing may be omitted, and the salve simply applied by inunction of the affected surface of the body, great precaution being taken as to the character of the clothing worn next to the skin. Often it happens that this unirritating material, after having taken up some of the salve applied to the surface, is itself a dressing, which, disregarding for a few days the question of cleanliness, suffices to secure a great deal of relief. It is rare, even in these milder cases, that the dusting powder can be with advantage applied directly to the surface, as its peculiar "drying" effect is irritating to the surface of the skin. Many patients in this condition experience relief from taking any one of the simple salves, such as vaseline, cold cream, mutton tallow, and, as Fox, of New York, has lately suggested, the balsam of fir, lightly anointing the affected surface with it, and over that thickly dusting the powder selected for the individual case.

When the active evidences of the disease cease to appear, the infiltration of the skin, which is frequently left, will as a rule slowly subside under careful hygienic management.

Especial care must be taken, in all cases, of the extremities, more particularly of the hands and the wrists. The gloves worn during the seasons of the year when the temperature variations are most sudden and the mercury approaches the zero point, should be preferably of kid,

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(Schwimmer.) ℞. Acid. salicylic., ʒ i, spts. vin. rect. ℥ii aq. dest., Oiss M. Solutions of corrosive sublimate 0.008 to 200. of water (Trousseau). ℞. Thymol. grs. xv. glycerin., spts. vin. rect., aa ʒ v, aq. dest. Oiss M. Plumbi acet., grs. xx to ℥ii of water; chloral-camphor, 1 part; glycerine, 2 parts; distilled water, fifty parts (some camphor will be here precipitated). ℞. Boracis, ʒ ii, glycerin., ℥i, spts. camph. ℥ss. aq. ros. ℥viss (Duhring). ℞. Glycerit. plumb. acetat. ʒ i, glycerin. ʒ ii, aq. ros. ad ℥iv. M. (Squire).

covered with the muff or with the fur glove. Woolen gloves and those lined with lambs' wool, flannel, and fur, are particularly harmful.

Attention was called in my first paper to the effects produced at the wrist by the play of the cuff over the surface, both the linen cuff and the edge of the sleeve of the coat, "waist," great-coat, or cloak. These parts are best protected by strips of cloth, spread with the salve, and neatly fastened over the surface from a point extending beyond the bases of the metacarpal bones, to the middle of the forearm. The back and sides of the neck when affected should also be protected from the linen collar and ruching, as also from the collar of the cloak, coat, and waist, by a silk handkerchief.

Latapin*, in the Proceedings of the Caucasian Medical Society, has lately advised for frost-bitten fingers and toes the painting of the surface with a mixture of dilute nitric acid, and peppermint water in equal proportions. After this application has been made for three or four days, the skin becomes dark, and the epidermis is shed, a healthy skin appearing underneath. He has found this plan very effectual among soldiers, who were unable to wear their boots, and in consequence have had frozen feet.

Few of the more modern devices of the therapeutist in dermatology are as useful in the management of these disorders as in others. The salben-mülle and pflaster-mülle, that come to us from abroad, are more applicable to cutaneous disorders of limited area. The salve-muslins, however, containing salicylic acid, thymol, zincoxyd, carbolic acid, and ichthyol, may be used over the fingers, toes, wrists,

* Brit. Med. Jour., Sept. 5, 1885.

forearms, and ankles; also, in the way suggested by my friend, Dr. Hardaway, of St. Louis, as linings for the hat, cuffs, and collar.

THE WATERY-DISCHARGES OF PREGNANT WOMEN.

By CHARLES WARRINGTON EARLE, M. D., *Professor of Obstetrics, College Physicians and Surgeons.*

[Read before the Chicago Medical Society.]

Mrs. F. K. consulted me for a profuse watery-discharge which had taken place several times during her pregnancy, commencing at the third month. She was the mother of three children, and had always been free from any marked pelvic disease. The first discharge was clear and watery, and she estimates the quantity at about two (2) quarts. This came away in a gush, most of it being discharged at once, although there was a slight loss for some days thereafter. At first it was thin and clear, then slightly thicker, with the color of weak coffee. These discharges seemed to occur every two or three weeks, and were frequently attended with considerable pain. There was a decided diminution in the size of her abdomen after each discharge.

On October 30th I found her in great pain, and an examination demonstrated that the fœtus was very low in the pelvis and apparently not surrounded with any liquor amnii. The os uteri was neither soft nor dilated. She was ordered anodynes and to remain in bed. On the 7th of November I again saw her, and found she had been having more or less pains since my previous visit. There was no dilatation. Ano-

dyne and rest were prescribed. Two days after, however, she was delivered, her gestation having been continued about 200 days. The child lived about one hour. She made a good recovery and resumed her place in her family in the course of two weeks.

Mrs. M., aged 27; in her 9th pregnancy. At the end of five months she commenced to have a flow of fluid which continued until the end of the seventh month, when she gave birth to twins, one living and the other dead. There was no escape of liquor amnii at her confinement. The same lady in her eleventh pregnancy commenced to lose fluid at the end of the seventh month, which continued until the completion of the full term, when she gave birth to a healthy child. She had what her attendants called a dry-labor.

Mrs. D. W. R., aged 31, the mother of nine children, has been pregnant since the 1st of July, 1885. On November 20th she said to a friend who was at her bedside that she was flowing, and asked to be supplied with a napkin. A sheet was folded and placed under the patient, which was thoroughly saturated with fluid; the discharge being equal probably to at least two pints. She had severe pains which simulated those of labor, lasting a few hours. On December 15th she had a similar discharge. The future of this case is yet to be decided.

Frequency.—These cases evidently take place with more frequency than we have, up to this time, supposed; but the older obstetric authors have noticed peculiarities of this kind, and given very fair descriptions of the complication.

Smellie says, page 179, Vol. ii, "Dribbling of fluid may go on for weeks, but a sudden gush is invariably fol-

lowed by parturition; the longest interval between a sudden gush and labor being seven days." In this he is certainly mistaken, as the history of many recorded cases and some of mine will demonstrate.

Denman, 1815, says: "Instances have been recorded in which the waters of the ovum are said to have been voided as early as the sixth month of pregnancy without prejudice either to the child or the mother. The truth of these reports seems to be doubtful, because where the membranes are intentionally broken, the action of the uterus never fails to come on. A few cases of this kind, somewhat similar, have occurred to me: A discharge of colorless fluid takes place, daily, from the vagina for several months preceding labour, which is due to the rupture of some lymphatic. Such labours are usually premature and the fœtus small."

The same authority also cites a case where, after the delivery of the placenta, several pints of lymph were discharged.

Burns, 1822, page 238, says that discharges of watery-fluid from the vagina are not infrequent, and generally depend upon the secretion of glands about the cervix; the rupture of lymphatics, or from fluid collected between the chorion and amnion, or water from blighted ovum in the case of twins.

Dr. Pentland relates a case where coughing produced a discharge, the water being discharged at the fourth month; but labor only occurred at full term.

Merriman, in his work entitled "Difficult Parturition," 1826, relates a case of a lady—six months pregnant—from whom a profuse, watery-discharge occurred. She summoned a physician, who assured her that if pains came

on she would soon be delivered. She continued, however, to the end of pregnancy, having a profuse discharge each day. At full term she was delivered, her attending physician rupturing a bag of water, which appeared in no way different from usual cases. No opening was discoverable in either the placenta or the membranes, and he concluded that the discharge must have come from the outside of the membranes.

Chailly, edited by Bedford, 1844, gives a rather full account of hydrorrhœa, the description not being different from those I have already related. He says, however, that these discharges are more frequent than are generally supposed, but makes the erroneous statement that in nearly all these cases pregnancy is carried along to its full term.

Nearly all modern authors devote a short section to the consideration of this subject, giving different names, as their ideas of its origin and pathology are different.

Three separate pathological conditions seem to be, in many cases, confounded, and I see no way by which a differentiation can be made.

1st. A discharge of the liquor amnii.

2d. Discharges from increased glandular action.

3d. A possible collection of fluid between or outside of the membranes, and its irregular evacuation.

In my teachings I have been in the habit of speaking of hydrorrhœa, but never, up to a few months ago, had I seen a marked case. A study of this case with others collected from my own experience, and the perusal of the article written by Dr. Thomas C. Smith, of Washington, D.C., which appeared in the *Obstetric Journal* in May, has caused me to go over the subject carefully and to present

what I can obtain from the authorities in regard to these peculiar discharges.

Great numbers of cases have been recorded, but no one, up to this time, has demonstrated conclusively the source of the flow.

The etiology of these discharges has been the subject of very different opinions by different obstetric authors. Chailly says that authors have attempted to show that these discharges are due to the accumulation of fluid between chorion and amnion; to rupture of lymphatic vessels; to transudation through amniotic membranes; to rupture of the membranes at some remote point from the orifice of the uterus, and finally, to dropsy of the womb.

Lusk says the pathological processes involved in the disease are vascularity, hyperæmia and hypertrophy of the interstitial connective-tissue, and of the glandular elements of the decidua.

Barnes, in the System of Obstetric Medicine and Surgery, 1885, says in regard to these discharges and without entering into a critical discussion of the several theories, that it seems to be well established that there are five sources from which this fluid may come :

1st. A discharge from the cervical canal.

2d. The decidual origin.

3d. Transudation through the amniotic membranes.

4th. Hydatidiform degeneration of the ovum.

5th. Cauliflower excrescences.

Symptoms.—There are no symptoms which give any indication that these discharges are about to take place, and after they have occurred once there is nothing which will give us intimation that they are about to recur. The pain

is sometimes great, and at other times none will be experienced.

In a few cases, when the liquor amnii is drained off, there is a very perceptible diminution in the size of the abdomen, and the fœtus will be found low in the pelvis, almost as if it were wedged into the cavity. The color and the consistency of the fluid will be different in different cases.

The *Differential Diagnosis* must rest between the following similar discharges:

I. From the discharge from hypertrophied cervical glands.

II. Fluid collecting between chorion and amnion, occurring only once.

III. Escape of fluid from amniotic cavity.

I. The fluid escaping from the hypertrophied glands must be small in quantity, and we would expect that it would continue for a considerable length of time. There would be no diminution in the amount of liquor amnii and the child would be found floating in the usual amount of fluid.

II. If the fluid collected between any of the membranes, and adhesive-inflammation surrounded it followed, a considerable amount of fluid might collect, and the discharges would be considerable at once, and might or might not be repeated. In such a case there would be no evidence of escape of true amniotic fluid, although there might be a lessened size of the abdomen.

III. Where the liquor amnii escapes there would be a greater tendency to uterine contractions; a more perceptible diminution in the size of uterine tumor, and a microscop ical or chemical examination would certainly reveal some evidence of urine, as we know this exists in variable quantities in the liquor amnii.

Transudation through the amniotic membrane, although recently noticed by Barnes, has been mentioned by older authors, would give rise to the discharge of a very small amount of fluid.

This could hardly be differentiated from a slight discharge, taking place from the cervical glands. Fluids discharged from hydatidiform degeneration of the chorion or from cauliflower excrescence, would be so associated with the diseases which cause them, that the diagnosis would not be difficult.

Prognosis.—As far as my observation goes the life of the woman is not jeopardized, but she suffers from the constant discharge and becomes anæmic. The pain is sometimes severe, as I have before remarked, and the patient is full of gloomy forebodings and anxious in regard to the final result.

The fœtus is usually born prematurely, and, in many cases, only lives a short time.

The treatment must necessarily be very simple—rest and anodynes being about all that can be suggested.

HYGIENIC CLOTHING. *By* L. L. McARTHUR, M. D.

[Abstract of a paper read before the Chicago Medical Society on January 4th, 1886.]

The object of clothing should be the promotion and maintenance of good health, together with a feeling of well-being under all atmospheric conditions.

Consideration of the subject naturally subdivides itself into:

I. Materials.

II. Texture.

III. Form of clothing.

Chief among the materials used for clothing in the order of their respective merits are linen, cotton, silk, and wool; the latter being the best.

A few words as to these materials in the raw state.

Linen conducts heat better than cotton, silk or wool. It absorbs moisture and does not shrink. Cotton, also a vegetable fibre, which is hard, durable and does not shrink, has serious objections, in that it is very non-absorbent of moisture. It does not conduct heat as well as linen, but more rapidly than silk or wool.

Silk, an animal product, consisting of fine, smooth, round fibrillæ, having been in the liquid condition before leaving the body of the silkworm, possesses no central canal, and no oily coating. It is quite a good absorbent of moisture, ranking next to wool. At ordinary temperatures it always contains between 9 and 12 per centum of moisture. In its sale or purchase, account is taken of the amount of moisture in order to protect the purchaser from paying silk-prices for water.

Wool, the fleece of sheep, an animal fibre, whose function in nature has been two-fold, the protection from cold, and an aid to evaporation of cutaneous moisture, is admirably fitted as a material for clothing. It permits but slow radiation of heat, and absorbs moisture better than any other clothing-material. It does this, according to Parkes, in two ways. 1st. By interposition between the fibres. 2d, By penetration into the central canal. His experiments led him to believe its hydroscopic powers double in proportion to its weight and quadruple for surface, as compared with cotton or linen. Perfectly dried wool has the power of absorbing 50 per centum, by weight, of water. Under ordinary conditions it contains 12 to 18 per centum.

Other things being equal, then, woolen fabrics will best pre-

vent too rapid radiation of heat, silk next, cotton third, linen fourth.

Wash-leather, buckskin, and chamois-skin need not be considered, for one or all of the following reasons: Expense, poor provision for evaporation, poor washing qualities.

As absorbers of moisture rank, respectively, wool, silk, linen and cotton.

The advantages of cotton over wool lie in its cheapness and non-shrinking qualities. If properly constructed, however, the advantageous properties of wool can be utilized, without the shrinking by using a cotton framework, into the meshes of which the loose raw fleece is worked.

That fabric will be best adapted for health, which combined with greatest porosity, possesses the least (a) conductivity, (b) greatest hydroscopic power, and (c) best shape.

By porosity is understood the freedom with which air can pass through the interstices of a fabric. Pettenkoffer's practical demonstrations with the following cloths showed that if heavy flannel be taken as permitting 100 parts of air to pass, linen permitted 60.3 or 60 per centum; lambskin 50.7 or 50.7 per centum; silk fabric, heavy, 41.4 or 41.4 per centum; glove-leather 1.5 or 1.5 per centum.

The conclusion follows that porosity does not injure the powers of preventing radiation, (it even increases it) for flannel, admittedly the warmest clothing, permits the freest circulation of air.

In consequence of the fact of a fabric's possessing great porosity, it contains in its interstices, what might be called "residual air." Whether gases possess conductivity is open to discussion, but this is certain, that such power is very small. Could we by any means envelope the body in a layer of stationary air we could reduce the heat-loss to a minimum.

A striking example of the poor conductivity of *stationary air*, is related by Dr. Kane, the Arctic explorer, who found that on perfectly still days they could withstand without suffering a temperature of —70 F., with ears and hands exposed, but the moment a breeze sprang up it became necessary to seek immediate shelter.

Although impossible to perfectly accomplish this (i. e., the surrounding of body in a stationary envelope of air), that cloth or fabric which most nearly approximates this, other things being equal, will prove itself the warmest as well as best adapted for evaporation of cutaneous moisture. Such a nearly stationary air occurs naturally in the various pelts, and although in many the integument is visible beneath, yet they can withstand the most rigorous weather. Thus Krieger's experiments with tin cylinders containing hot water with two coverings of different materials, between which an interval of ⅛ to ¼ inch was left, proved (after subtracting the amount due for conduction) the impediment to radiation by the second layer to be, viz.: linen, 32; silk, 32; flannel, 29.

Thus showing that the stationary air, rather than the material out of which the second layer was made, was the main factor in preventing radiation.

He then experimented with single and double layers of the same material surrounding these cylinders, obtaining the following instructive results; the numbers representing the proportionate loss of heat through double to single layers, the losses through the single ones being taken as 100.

Double Stuff "Doppel Stoff" Fleece-lined cotton,	69—76
Buck-skin, " " " " "	74—86
Flannel, " " " " "	86
Home-spun linen, " " " "	91
Stout, extra-heavy silk, " " " "	94

From these results the conclusion is obvious that the substance and its weight are of less consequence, where *radiation* is in question, than its texture and volume. Believing that the explanation was due to the "residual air," experiments have been made with loose wadding, noting the rapidity of fall of temperature, on compressing the same wadding, when the fall was far more rapid.

Again, the loss of heat through a rabbit's fur being taken as 100, when shorn of its hair it rose to 190; and further destroying its porosity by a coating of gum-arabic, it rose to 296. (Dict. Hygiene.)

By greatest porosity best provision is made for the evaporation of perspiration, the quantity of which varies greatly under different conditions. In a day of rest the amount as determined by Seguin and Voit is 900 grams (about 1 quart). During exercise it may increase to quantities incredible, were the figures not furnished by the best of observers. For example, Dalton mentions its increase to 380 grams per hour! and Dr. Southwood Smith has seen it rise to 1,600 grams per hour during violent exercise in a heated atmosphere! Now if a clothing possess no porosity, *e. g.*, the mackintosh, and rubber clothing generally, even without exercise there would collect somewhere beneath it a quart of water, but if exercise be indulged in, the quantity may become large indeed; particularly after the atmosphere beneath has been surcharged with vapor and evaporation ceases to occur from the surface, and with it the grateful cooling process. The French Government has not permitted its introduction into its army for such obvious reasons. Of course, for a short time during a shower they may and do prove useful; but I am convinced that many have incurred

most serious injury, even death, by throwing off the rubber clothing, after the inner clothing has become permeated with moisture, when the chilling, incident to the sudden increased evaporation, has resulted in some acute inflammation.

Moreover, the evaporation of the normal cutaneous moisture (with that of the lungs) requires 750 heat units or one-fifth of all the heat produced in the system (Dalton). Conservation of part of this loss, contributes an equivalent amount of force to the organism, since heat and force are interchangeable terms. *This can be done!*

Under normal conditions evaporation of perspiration occurs in the "insensible," *i. e.*, vapor-state, but change of these conditions (increased heat, and moisture in the atmosphere, increased exercise, etc.,) causes it to collect upon the integument in the visible or sensible state, and unless conducted away, may chill the body. Prevention of such condensation will avoid such dangerous and deleterious influences. The cause of condensation is a lowering of the temperature. We have simply to maintain its temperature until at a perceptible distance from the body. This can be accomplished by a layer of loose wool, such as is hereafter described. The "residual air" having been once raised to the body temperature, it remains so, and the vapor does not assume the liquid state until meeting with the chilling influences in the outer layer of cloth.

Finally, bodies passing from the gaseous to the liquid state emit the heat—latent heat—which was essential to their assuming the gaseous condition. This occurring in the case of perspiration in the cloth-interstices increases by just so much their warmth, in other words lessens the demand for heat-production.

Before leaving the subject of texture, note should be made of the importance of its being of a loose nature. However great the hydroscopic power of a material in the raw state, if it be tightly woven that power is greatly diminished, or even quite destroyed. Hence the advantage of loosely-knitted over tightly-woven goods.

Important indeed is the proper fitting of clothing. However good the materials they may then not accomplish their purpose for the following reasons :

I. By close application to the skin certain materials acting as cutaneous stimulants, maintaining an active equable circulation. Wool possesses this property most markedly; even in some delicate skins proving an irritant. A very marked increase of oily matter is excreted over those areas where oil-glands exist in greatest abundance, *i.e.*, mesial line of thorax, in front and behind ; thus improving the flexibility of the skin.

II. By fitting neatly, chambers of air heated by the body are not with every change of position of the wearer forced out, as occurs in illy-fitting clothing. Upward currents of air naturally occur, and if permitted to exist carry off large amounts of caloric. Simple attention to these two facts reduced the death-rate of the Würtemburg Army Corps, from 3.22 to 1.64, as compared with the other departments of the German Army.

The general application and advantages of such an ideal clothing to diseased conditions, it is needless for me to describe to a body of medical men ; but particular references ought to be made to rheumatism and nephritis ("kidney troubles"). To the former because best provision is made for cutaneous elimination (always acid !) so essential

in that disorder, in which there is so marked a diminution in the alkalinity of the blood; to the latter because sudden congestions are obviated in an organ already overworked, by preventing sudden chilling of the surface.

It only remains for me to call your attention to my accidentally finding such a clothing upon a patient of mine (Mr. Jaros), and the tests to which I have put it.

He described its history and manufacture as follows:

"While suffering from an attack of rheumatic sciatica in the Harz mountains, following a peasant's advice I enveloped myself in loose lamb's fleece, which he provided, and I experienced speedy relief. On reaching Berlin I consulted Chief-Councillor-of-Health, Dr. Abarbanell, who advised me to have constructed some underwear with a fleece lining. I sought a weaver and had some underwear knitted, into the meshes of which were worked, 'by hand,' during the process of knitting, layers of loose lamb's wool."

Now, gentlemen, this device was a particularly happy one, in that all the requirements of a truly hygienic wear are provided for.

Porosity, warmth, absorbent powers, and elasticity. With advice he set to work and perfected a modification of the knitting-machine which incorporated into the meshes of the cloth, loose lamb's wool. The samples presented speak for themselves as to its success. By the use of such a fabric, perspiration (unless excessive indeed) remains in the insensible state until it meets with the cooling influences externally in the cotton framework, the integument remaining dry; while the cotton back, as well as the linen shirt over it, may be "wringing wet." Exposure to cool draughts with such a suit does not chill the integument because the sudden

increased evaporation occurs at a distance from the skin, and is separated from it by a layer of wool.

To test the soundness of the theory I submitted myself to a temperature of 115°F., under as nearly as possible the same atmospheric conditions, with the three chief winter suitings, and obtained the results in table below:

	Jaros Hygienic Wear.	"Nonotuck" Silk-suiting, heavy.	Cartwright & Warner's.
Weight after	8,020	7,867	10,840
" before exposure	7,010 grs.	7,140	9,600
Difference	1,010 grs.	727 grs.	1,240
Degree of absolute dryness of air	61,827	77,32	69,947
Temp. dry bulb therm	115°F	113°F	116°
" wet " "	89°	83°	88°
Sensations	Warm but not sticky; outer surface damp; skin dry where wear touches; comfortable.	Cooler than other wear; sticky; skin damp; comfortable.	Sticky; clammy; wet through; uncomfortable.

From these experiments it is to be seen, that of all the perspiration exuded, the silk retained (by a small amount) the least; the hygienic wear the next, and the English woolen goods the most. Note, however, must be taken of two facts concerning the experiment with the silk-clothing.

1st. The temperature was 2°F. lower than when testing the hygienic wear and 8° than the English goods. Hence less perspiration was thrown out.

2d. There was a difference of 15.5° of *absolute* dryness of the atmosphere, hence evaporation took place more rapidly from the silk-goods in the dryer atmosphere. The barometer remained almost stationary during the three days of observation.

On emerging from the hot-room into one of a temperature

of 70°F., an immediate chilling was felt with the silk goods; while the English gave a sensation of moisture and cold. The chilly sensation *was not experienced* with the woolen-lined hygienic-wear.

CONCLUSIONS.

1st. That the fleece-lined goods are warmest.

2d. Permit at least equal evaporation with the silk.

3d. Guard against sudden chilling of the body.

4th. Are cheaper than silk and as cheap as Cartwright & Warner's.

5th. Are particularly indicated in rheumatism and kidney-disease.

SOCIETY REPORTS.

TRANSACTIONS OF THE GYNÆCOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, 18th December, 1885.

I. JAGGARD. *Two Recent Models of the Axis-Traction Forceps.*

II. BYFORD. *Report of a Case of Pelvic Abscess, with Remarks upon the Treatment.*

The PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

I. PROFESSOR W. W. JAGGARD read a paper entitled, TWO RECENT MODELS OF THE AXIS-TRACTION FORCEPS.

The object of the paper was not the description of some modification by the writer, although such a contribution to the literature of the subject would be perfectly legitimate

in view of Pajot's witty remark to the effect "that he does not reproach a man for having invented a forceps, since that might happen to any one."—(*Barnes.*)

BREUS and FELSENREICH, formerly assistants respectively in the third and first obstetrical clinics of the Vienna General Hospital, have recently made important alterations of Tarnier's axis-traction forceps. The importance of these modifications was so great that no apology was demanded for calling attention to the instruments.

Historical.—As the result of the labors of Sir J. Y. Simpson, Nägele, Busch, Levret and others, the low forceps operation may be regarded as a comparatively perfect operative procedure, both as regards instruments and mode of operation. The case is different with the high forceps operation. This operation is always difficult, and sometimes dangerous, with the instruments mentioned. The cause is obvious. The applied force can be resolved into two components, one in the direction of the axis of the plane of the inlet, the other perpendicular to the first, directed towards the posterior surface of the symphysis. The first component is alone active in causing the descent of the head; the second makes the extraction more difficult and exposes the maternal tissues between the head and symphysis to traumatism. As remarked by Schauta, (*Grundriss der Operativen Geburtshilfe*, Wien, 1885, p. 162,) "the unphysiological and therefore mischievous element in the operation of the forceps, as compared with the effects of uterine contractions, when the head is at the inlet, consists in the fact that the forceps draws the firmly-held head in a direction which it can never follow, while the uterine contractions simply drive the head into the pelvic cavity, and permit it after that to seek

the direction of least resistance." The older obstetricians, fully recognizing these facts, attempted to apply the power to the classical forceps, in such a way as to secure a more favorable direction of traction. Osiander (1799) and Stein, Sr. (1805) may be mentioned among the older obstetricians, who devised instruments for making traction in the axis of the inlet. Hermann (1844) (Kilian's *Armamentarium lucinæ novum*) constructed an instrument, in which an iron lever is attached to the lock. J. P. Hubert (1860) attached a vertical iron lever to the extremities of the ordinary forceps. This lever was subsequently attached to the lock. Eugéne Hubert, his son, constructed an axis-traction forceps with parallel branches and a sharp perineal curve. Chassagny, Joulin, Pros, Poullet, Moralès Apaca (1871) and others have constructed various types of axis-traction forceps at a more recent period. In many of the modern French instruments an attempt has been made to apply some of the well-known principles of veterinary surgery.

TARNIER'S FORCEPS. In 1877, Tarnier, following in the wake of Hermann, Hubert, and the more recent French inventors, constructed and published a description of his well-known instrument. Since that time, he has produced more than thirty distinct models. His last model consists of the classical forceps of Levret, (without a perineal curve) and axis-traction rods attached to the posterior, inferior border of the blades, or spoons. Tarnier claims a number of advantages for his instrument over any other axis-traction forceps. He claims that it is superior to the classical instruments in the following particulars:

1. It is possible to apply traction in the direction of the principal pelvic axis.

2. Sufficient mobility is conferred upon the child's head to permit it to seek its way through the pelvis in the direction of the least resistance.

3. The handles indicate to the operator the direction in which traction should be made.

With reference to the first proposition, it may be said that traction with Tarnier's forceps is not made in a curved line, accurately coincident with the principal pelvic axis, when the head is at the inlet. Nor is traction in this direction absolutely necessary, as remarked by Schauta, seeing that the resultant of the forces, developed by uterine contractions, and the resistance opposed by the pelvic floor, does not propel the head in the direction of the principal pelvic axis.

The handles, as indicators of the direction in which traction should be made, are of relatively slight value.

On the one hand, the operator who is at all qualified to apply the forceps to the head at the inlet, ought to have a correct conception of the direction in which traction should be made. On the other hand, strict attention to the handles may prevent the operator from observing a number of important events, ex. gr., the relation of the head to the vulva, slipping of the instrument, etc. (Schauta.)

Finally, the handles are not a correct indicator of the direction of the principal pelvic axis.

The advantage of Tarnier's forceps over its predecessors lies in the mobility conferred upon the fœtal head by the joint, uniting the blades and the so-called axis-traction rods. The head does not follow the direction of the principal pelvic axis, but seeks the path of least resistance. In consequence, the operator is spared the fatigue of unnecessary effort, and the mother, the dangers of traumatism from violent traction.

I. BREUS has recently constructed an instrument which has a great advantage over the forceps of Tarnier, in that a greater degree of mobility, during traction, is conferred upon the head.

The continuity of the blades (*Löffel*) is interrupted at, and below, the fenestræ, by a strong flat joint, which admits of movements in the sagittal direction, and corresponding variability in the angle at which traction is applied to the head. The superior ribs of the instrument are prolonged, and turned upward like spurs. These spur-like prolongations are joined by a metallic rod in order to preserve a certain parallelism of the blades.

Apart from these peculiarities, the instrument is identical with the original model of Sir James Y. Simpson's forceps.

This instrument, devised by an obstetrician of large experience, is employed on an extensive scale at Vienna, in Gustav Braun's obstetrical clinic. Schauta (*Grundriss der Operativen Geburtshilfe*, Wien, 1885, p. 164 et seq.) recommends the instrument as the most perfect axis-traction forceps in existence, to his classes at the University of Innsbruck. Fürst's recent favorable note on Breus's forceps in the *Centralblatt für Gynækologie*, 1885, is well known.

II. FELSENREICH'S MODIFICATION OF PROFESSOR ALEXANDER SIMPSON'S MODIFICATION OF TARNIER'S AXIS-TRACTION FORCEPS.

In 1880, Professor Alexander Simpson, of Edinburgh, sent to Professor Carl Braun a modification of Tarnier's axis-traction forceps, which at once superseded the French instrument in the first obstetrical clinic of the Vienna General Hospital. Simpson substituted Sir J. Y. Simpson's original model of the classical instrument for Levret's. The compression-screw is located on the upper third of the superior surface of the handles. Comparatively unimportant modifications were made with reference to the traction-rods, and the hard-rubber handle, into which

the traction-rods fit. Felsenreich has materially enhanced the value of Professor Alexander Simpson's instrument by a number of important alterations.

Felsenreich's modification of Professor Alexander Simpson's axis-traction forceps, as shown by the model presented, manufactured by Mr. J. Leiter, of Vienna, during October, 1885, consists of the following parts:

I. A practically unaltered model of Sir James Y. Simpson's forceps (*Wiener Schulzange*).

II. Button-hole perforations, one behind each fenestra, into which traction-rods are inserted, and maintained by the buttons on the ends of the rods.

III. A removable compression thumb-screw, which sinks into a groove made in the extremities of the handles of the Simpson forceps.

IV. A hard-rubber handle for the traction-rods. The arrangement for the insertion of the traction-rods into the hard-rubber handles differs from the mechanisms in Tarnier's and Alexander Simpson's axis-traction forceps.

The attachment of the compression-screw to the ends of the handles, and certain changes in the curve of the axis-traction rods have been made at a comparatively recent period, but prior to 1883.

Dr. L. E. Neale, of Baltimore, published an article in the September number of the *American Journal of Obstetrics*, 1885, entitled "An Obstetric Forceps." In this paper Dr. Neale describes an axis-traction forceps, devised by himself, which differs in no essential particular from Felsenreich's modification of Alexander Simpson's instrument. Editorials have appeared in the *Journal of the American Medical Association*, 26th September, 1885, and the *Therapeutic Gazette*, 15th December, 1885, calling attention to the facts, that a forceps, identical with

the instrument devised by Dr. Neale in all essential details, had been constructed several years before in Vienna by Dr. Felsenreich, and that Dr. Neale had probably forgotten the existence of that instrument, although he had seen it in active operation in the lying-in ward of Carl Braun, in various courses on operative obstetrics, and in the shop of Mr. J. Leiter, the instrument-maker to the Vienna General Hospital. The only criticism that the writer would make, with reference to these editorial notes, was, that Dr. Felsenreich, not Dr. Neale, applied the compression thumb-screw to the ends of the handles. Dr. Neale has made some trivial modifications in the hard-rubber handle and the mode of insertion of the traction-rods. Dr. Neale made no allusion to Alexander Simpson's modification of Tarnier's instrument in the paper mentioned, and his allusion to Dr. Felsenreich's suggestion of the button-hole joint is, to put the case very mildly, disingenuous.

In conclusion, Professor Jaggard said that he was of the opinion that the axis-traction forceps of Breus and Felsenreich were superior to the most recent model of Tarnier's, or any other axis-traction forceps that had come under his observation. He requested that the discussion be limited to the comparative merits of the forceps presented—Breus's and Felsenreich's—and other recent models of the axis-traction instrument.

DISCUSSION.

DR. JOHN BARTLETT said that he had devised an axis-traction forceps in 1880, identical in principle with the instrument constructed in 1860 by the elder Hubert. His attention had been first called to the coincidence by Professor Lahs's monograph on *Die Achsenzug-Zangen*, Stuttgart, 1881.

DR. HENRY T. BYFORD thought the instrument described by Dr. Neale in the September number of the *American Journal of Obstetrics*, 1885, was identical in all essential particulars with

Felsenreich's modification of Alexander Simpson's instrument devised two or three years before.

DR. PHILIP ADOLPHUS, PROFESSOR A. REEVES JACKSON, DR. H. P. MERRIMAN, DR. H. P. NEWMAN had never observed indications for axis-traction forceps; had never employed such instruments, and thought they were unnecessary.

PROFESSOR JAGGARD said he had no desire or intention to discuss the general subject of axis-traction forceps, and had expressly requested that the discussion should be limited to the consideration of the relative merits of the instruments presented for examination, (Breus' and Felsenreich's) and other modifications of the axis-traction forceps. He thought that gentlemen of limited experience in cases indicating the high forceps operation, and particularly those who had absolutely no experience with axis-traction instruments, should be temperate in their criticism. Carl Braun, Pajot, Charpentier and others had practically rejected such instruments, but only after serious and experimental consideration of their merits. On the other hand, many younger obstetricians, including Schauta, Felsenreich, Breus, Ehrendorfer, thought there were cases in which they might be profitably employed.

II. DR. HENRY T. BYFORD read a paper, entitled, REPORT OF A CASE OF PELVIC ABSCESS, WITH REMARKS UPON THE TREATMENT.

Mrs. T., aged twenty-five years; married five years; German descent; of nervous temperament; small and slight in figure, but in good general health, consulted me, during the fall of the year 1884, for sterility and dysmenorrhœa. She had never menstruated without pain, but had otherwise enjoyed good health. An examination revealed a small uterus and cervix, with acute anteflexion and consequent apposition of the anterior and posterior uterine walls. Slippery elm tents, used

about once in eight days, alternated with glycerine tampons, had for their effect a gradual relief of the dysmenorrhœa.

About the middle of the following February, I was called to her house to treat her for a severe attack of pelvic cellulitis, contracted a week before while returning home from a dance. The whole pelvic connective-tissue seemed involved, and large tender lumps could be felt externally in the left iliac region.

Six weeks from the beginning of the attack, an abscess opened into the anterior wall of the rectum, about two inches from the external anal orifice. On account of the extreme debility of the patient, her horror of operative procedures, and the absence of any well-marked fluctuation, all surgical interference with the suppurative process had been out of the question.

Palliative treatment was instituted and continued without effect until the sixth of June. In the meantime the pulse remained in the neighborhood of 120° F., and the temperature fluctuated between 99° F. and 102° F.; attacks of acute suffering and septicæmic diarrhœa required opiates for their relief; the bacillus tuberculosis was discovered in the pus; yellow pigmentary deposits covered her face, and emaciation became extreme, her weight ranging between eighty-two and eighty-three and one-half pounds. Her courage began to fail, and finally after the concurrent recommendation of the consultants, Drs. Wm. H. Byford, J. E. Owens, George M. Chamberlin and Martin Matter, she consented to an operation.

Accordingly, on the 6th of June, Dr. Wm. H. Byford operated according to his usual method in such cases. After etherization, he forcibly dilated the sphincter of the anus, tore open the fistulous track with the finger, and then enlarged the abscess in the same manner, in the direction of the lowest part of the cavity, until it readily admitted two fingers. Upon

made a digital examination, and found the abscess to extend across the pelvis, behind the uterus and broad ligaments, above the level of the fundus uteri on the left side, and to be filled with bands and projecting masses of granulation-tissue of about the consistency of freshly coagulated blood. Previous treatment, except to diminish and control the septicæmia, had evidently been a complete failure All of this medullary tissue was then scooped out with the finger and the cavity thoroughly cleansed with a two and a half per cent. solution of carbolic acid.

The highest temperature after the operation was 99° F., on the day following. Perfect drainage had been secured, for at the time of each dressing no pus was found inside of the abscess.

The cavity of the abscess was treated by irrigation with antiseptic solutions, insufflation with iodoform and the introduction of cupric sulphate.

Early in September she was attacked with the then prevalent epidemic, dysentery, and died on the 23d instant.

At the post-mortem examination made about thirty hours after death, I was somewhat hampered on account of a promise, exacted by the husband, that no organ should be taken out of the body, and by the fact that I had but thirty minutes for work before train time. The body had again become extremely emaciated. Abdomen was flat. An incision was made from a little above the umbilicus to the pubic bone. The pelvis was filled posteriorly with a solid mass of plastic tissue, which had drawn the uterus backwards to within about half an inch of the sacrum, so as to put the anterior vaginal wall upon the stretch, and had buried the uterus and other pelvic organs in its substance. Both round ligaments were seen

issuing from this mass. It was necessary to cut down about half an inch before reaching the depressed uterus, and to tear through solid tissue behind it to arrive at the rectum below. The finger broke through into the rectum, behind the dimpled cicatrix that marked the site of the former outlet of the abscess. The left broad ligament was then felt to be represented by, or inclosed in, a tough band half an inch thick antero-posteriorly; extending from the uterus to the left side of the pelvis. The left ovary could not be found. A small flat piece of what seemed to be ovarian tissue was found adherent to the bladder on the right side. The right broad ligament was apparently disorganized and inseparable from the plastic deposit. The rectum was held inflated at the point where it issued from the pelvis, was dark colored and injected on its external surface, and blackish and softened on the internal. Neither the appearance nor the odor of an abscess could anywhere be discovered.

There seem to have been two hinges, as it were, upon which the treatment of this abscess turned: first, the operation per rectum: second, the cauterization by sulphate of copper. Both secured a large opening at the lowest portion of the pyogenic cavity, and brought away the unhealthy granulation-tissue. Had the patient consented to have the unobstructed outflow of the pus maintained by one or two subsequent dilatations, similar to the first one, the cure would undoubtedly have been more rapid. As it was, the contracting sphincter and abscess outlet rendered the drainage and irrigation imperfect. Progress toward recovery was, however, again inaugurated upon the melting away by the sulphate of copper of the newly and imperfectly formed cicatrical tissue, reproducing the opening made at the time of the operation and by the

destruction of the degenerative deposits and cauterization of the chronic pyogenic surface. The only kind of treatment preferable to this free drainage and clearing out method is the strictly antiseptic, which, after the pus has once found a way into the rectum, can only be accomplished by first closing this septic inlet.

The treatment by a counter opening in the vagina is much less preferable, because a recto-vaginal fistula, difficult of cure, and liable, like anal fistula, to inoculate the system with tuberculosis, would be left.

The treatment by abdominal incision cannot for a moment be entertained, for at least two reasons:

1st. It is necessarily followed by a recto-abdominal fistula of great length, which is incapable of being promptly cured, and is apt to become an unfailing source of systemic infection. Those patients already operated upon, as far as reported, have usually either died shortly, or within a year or two, imperfectly cured. They would have, on an average, lived about as long without the operation. In fact, it is not impossible that one such, whom I had, previous to the operation, an opportunity of watching for a short time, would finally have recovered through the process of nature. To operate as does Lawson Tait, before the abscess has discharged, and then treat it antiseptically through its single opening, is an entirely different matter.

2d. The danger of an abdominal incision should never be incurred without a prospect of compensation in the way of bettering the patient's chances of recovery. Neither theory nor practice as yet prove such compensation to be attainable.

In some cases one dilatation per rectum, without after-treatment, has sufficed for a cure; in other cases two or more, with

subsequent antiseptic irrigations, have become necessary. But as a general rule it may be said that, unless instituted too late, the procedure is safe and the recovery sure.

DISCUSSION.

PROFESSOR CHRISTIAN FENGER made some remarks on laparotomy as compared with other operations, of which the following is a brief abstract:

When a peri-uterine abscess points somewhere in the vagina around the lower part of the uterus, no surgeon would, of course, think of doing anything but opening the abscess, inserting a drainage tube, and by washing out, endeavoring to effect the closure of the cavity. But in some cases the opening into the vagina is just as ineffective as a spontaneous opening into the rectum. In obstinate cases of this kind laparotomy, at a later period, will have to be performed.

There is, however, no doubt that secondary invasion of septic poison, when the abscess is opened from the vagina, is much more difficult to prevent than invasion into the abscess from the abdominal opening. It is only in this way that we can account for the difference in the course of the after-treatment of peri-uterine abscesses opened through the vagina and through the abdominal cavity; a difference that Lawson Tait rightly calls attention to as being decidedly in favor of the abdominal operation. Here the abscess closes more quickly, and the course of the after-treatment is much less febrile than in the vaginal operation.

Sometimes a peri-uterine abscess will point into the rectum, sufficiently low down to permit of an opening here. It does not seem probable that the access from the rectum will be very promising, as effective drainage is next to impossible; but the cases of cure by spontaneous opening into the rectum evidently make an operation here permissible, and perhaps

advisable, but only as a trial. If the abscess does not retract within a reasonable time, other measures must be resorted to.

It is needless to state that if a parametritic abscess points anywhere along the iliac fossa, it should be opened and drained from this point; but this does not belong to my subject of to-night, as I desire to call attention only to strictly circum-uterine abscesses, which can only be reached from the vagina or from the supra-pubic region.

When a circum-uterine abscess does not point downward, and, in fact, does not point anywhere, it is then the surgeon's task to find the safest way into the abscess through a smaller or larger amount of surrounding tissues.

We shall first consider the vaginal operation:

When so eminent an authority as Schröder, of Berlin, advocates this method of reaching a high peri-uterine abscess there must be cases in which this operation is advisable. From a general point of view an extra-peritoneal outlet of the abscess through the vagina would seem to be safer than laparotomy, upon the same grounds as a vaginal hysterectomy is safer than Freund's abdominal hysterectomy, and Schröder's successful operation, already mentioned, vouches for the method.

At the same time, I firmly agree with Lawson Tait, that there are some grave objections to the vaginal operation. In the first place, a high-seated peri-uterine abscess is difficult to reach. It is difficult to work with safety two or three inches above the introitus of the vagina, in tissues that are immovable, and where the parts cannot be drawn down toward the operator. These difficulties are, of course, of less importance in the master hands of an operator like Schröder, but increase in significance for less experienced surgeons.

But the operation through the vagina is more or less an operation in the dark. We may be dissecting up along the

posterior surface of the neck of the uterus, and may open into recesses of the peritoneal cavity between the abscess and the uterus. Further, it might be easy in this place to open into the rectum.

Another danger, especially in abscesses between the two layers of the lateral ligament, might easily arise from the rupture of the large uterine vessels running in the wall of the sac. It would be exceedingly difficult, and I should say next to impossible, under such circumstances, to secure and ligate these vessels, the point of ligation being so high up, the working space so small, and the tissues so immovable.

All those objections and dangers we do not encounter in laparotomy. We can see distinctly, and recognize with our own eyes, every particle of tissue we have to divide; the large uterine vessels, if divided, can easily be taken up and ligated. There is no risk of having any communication between the abscess and the peritoneal cavity, which we cannot either close up or drain.

If the laparotomy lasts longer, and gives more technical work to the surgeon, it seems to me that these objections are fully balanced by the advantage of not being obliged to operate in the dark, of not having to battle with enemies that we cannot see, and consequently cannot guard against.

But these are not the only advantages of laparotomy, as compared with the vaginal operation. The free access to the whole interior of the abscess cavity has also to be taken into account. By laparotomy, the abscess is laid open to about the same extent as a tubercular peri-articular abscess. We can examine the whole interior of such a cavity, and scrape off, or remove by other means, whatever objectionable material we may find, cheesy matter, tuberculous tissue, fungoid granulations—since we can see clearly every place where the in-

strument is applied, without any danger of going through the abscess wall into any surrounding cavity or organ.

. It is more than possible that this free access to the abscess wall has something to do with the speedy recovery subsequent to laparotomy, as compared with the vaginal operation.*

But, of course, there will always be connected with laparotomy the inherited dread of opening that ominous peritoneal cavity. Modern surgery, however, is making steady progress in diminishing these dangers. Thus, the dread, as well as the safety of the patient, will, to a great extent, rest in, or depend upon, the care and skill of the operator.

PROFESSOR W. H. BYFORD: I do not wish to comment upon the contents of the paper further than to express myself in reference to the mode of operating adopted in consultation with the gentlemen mentioned. A large number of pelvic abscesses can be managed through the rectum with more facility and safety, than any other medium of approach to the deep-seated portions of the pelvic cavity. I do not know whether there are any cases wholly situated in the pelvic cavity, but that can be reached, opened and evacuated through the rectum. It may not always be the most eligible direction to approach collections of pus. In instances in which the pus is making its way toward the vagina, and fluctuation can be felt through the vaginal walls, it ought to be evacuated through that canal; but when the point of discharge is not thus indicated the exploration is most easily made through the rectum; and all chronic cases that have already commenced to discharge into the rectum can and ought to be treated from the cavity of that viscus. I would make no exception, however high the opening might be, so it was within the pelvic cavity. By proper preparation the whole length of the rectum can be reached

* Lawson Tait, op. cit.

from the sphincter to the promontory of the sacrum, and from any part of it the pus evacuated; the pyogenic cavity explored and drainage and irrigation safely and securely accomplished.

I believe the dangers of this mode of operating to be incomparably less than by abdominal section; and the other results of the operation—such as drainage and disinfection—more complete.

To effect the objects mentioned, the sphincter should be stretched to laceration; and until there is no tendency to immediate contractions of the anal opening, and till it can be dilated to the full extent of the rectal cavity. Thus thoroughly opened, the whole extent of the rectum can be explored with great facility and often by means of dilators can be seen, and instruments used under the eye of the operator.

If the pus is to be sought after, palpation with the fingers becomes easy and satisfactory; if it is being evacuated, the orifice seen or felt and such treatment as is desired applied. I very much prefer stretching and tearing for the purpose of increasing the size of the discharging orifice to the use of cutting instruments. The opening will not so readily close and there will not be so much hæmorrhage.

In effecting the discharge of the pus, we should remember that the reason why the pyogenic cavity is at no time wholly obliterated is because there are irregular loculi or pockets so situated that they do not empty themselves. The opening should therefore be made large; the parts torn by the fingers until this inferior margin of the opening is as far below the main body of the cavity as practicable. With the fingers the interior bands and partitions should be completely broken down and the interior of the cavity rendered as nearly symmetrical as possible. This will enable the whole of the contents of the cavity to escape by means of gravity, and the fluids

used in irrigation find their way out without difficulty. In addition to this shaping of the cavity, the large granulations—generally so abundant—should be scraped away by the fingers or by a dull curette, thus freshening up the lining membrane of the pyogenic cavity and converting it from a state of indolent ulceration to one disposed to heal. This process of curetting also produces a change in the capillary circulation that makes nutritive processes more salutary. Often in very indolent cases the sphincter will recover contractile power to such a degree as to require one or more repetitions of the operation. The same thing may be said of the margin of the orifice in the intestine. We will be obliged to enlarge it and treat the cavity as before.

In the case narrated in the paper, the action of the sulphate of copper seemed most useful and contributed the last influence necessary to the cure.

I have said nothing about the more common items of treatment, such as irrigation, disinfection and stimulation. My intention is to show the facility with which, in many instances, these purulent collections can be reached and treated by dilating and distending the rectum and the comparative safety of such proceedings.

PROFESSOR E. C. DUDLEY: The experience of Dr. Byford and others in the treatment of pelvic abscess by this operation must be considered as proving the great value of the operation in cases in which the abscess can be easily approached and thoroughly drained by dilatation of a sinus between the abscess-cavity and the rectum. It would, however, appear on general principles, that sufficiently free and long-continued drainage would in many cases be almost unattainable and that an abscess-cavity left thus to heal must often be the starting point of sinuses formed by the uncontrolled burrowing of pus

in many directions. The almost inevitable invasion of the abscess-cavity by fecal matter is clearly a serious factor in connection with the history of these cases. The great mortality from pelvic abscesses opening spontaneously into the bowel demonstrates the inability of nature to provide for adequate drainage. Whatever question, therefore, we may raise relative to the advanced position of Dr. Wm. H. Byford, who, if practicable, would prefer to open a pelvic abscess through the rectum—even in those cases in which nature has not anticipated him—there can be no question about the propriety of enlarging and rendering more effective an opening already formed. I regret that the essayist has marred a most admirable contribution by the sweeping statement that in all cases in which drainage has been spontaneously established through the rectum Lawson Tait's operation is contra-indicated. Nor can I imagine from what premises he has formed the conclusion that Tait's operation prevents closure of the sinus between the abscess-cavity and the rectum. The question naturally arises whether Tait's operation might not in such cases fulfil a well recognized surgical indication by establishing a free counter-opening for an abscess which otherwise might refuse to close on account of imperfect drainage and on account of its forming a blind sac for the retention of fecal matter. To a larger number of recognized authorities, who deem an opening into the rectum, whether produced by nature or by art, a grave misfortune, the query would naturally arise whether such an opening ought not to be supplemented by a counter-opening, which would bring the draining and cleansing of the abscess-cavity within the easy and absolute control of the surgeon. Furthermore, in view of the decided mortality which attends the spontaneous

opening of pelvic abscesses into the rectum, and in view of the almost uniformly successful results recorded in the statistics of Tait's operation already published by Mr. Tait and others, and in view of a very generally accepted rule that the operator in opening a pelvic abscess should strive to keep out of the rectum, I don't think a statement that the rectum is to be preferred as the site of the primary operation ought to go on the records of this society unchallenged.

PROFESSOR J. T. JELKS (present by invitation) thought a great mistake was made in waiting too long before operating in cases of chronic pelvic abscess.

DR. PHILIP ADOLPHUS thought the paper was beyond the pale of criticism. When the general symptoms indicated a collection of pus, the cavity should be searched for. If a cavity containing serum was found, an operation was contraindicated. If the cavity contained pus, it should be evacuated.

In closing the discussion, DR. H. T. BYFORD objected to the quotation of Lawson Tait's statistical triumphs in this connection. In the last edition of Tait's *Diseases of the Ovaries*, abdominal section is recommended for those pelvic abscesses only that cannot be successfully evacuated from below. They are generally such as are situated high up, and do not point early in the vagina or rectum, or they are suppurating hæmatoceles.

The statement that the recto-abdominal fistula, left after abdominal section for a pelvic abscess that has already discharged into the rectum, would heal readily, like any artificial anus, is not borne out by facts. Fistulæ connecting the rectum with the external air have seldom healed, when left

to themselves, before a long period of time had elapsed. Operative measures cannot (in these cases) be resorted to on account of the length, situation and relations of the fistulous track.

W. W. JAGGARD, M.D.,
Editor.

2330 Indiana Avenue,
25th Jan., 1886.

CHICAGO MEDICAL SOCIETY.

Stated Meeting January 4th, 1886.—The President, C. T. PARKES, M. D., in the chair.

The first paper read was entitled *The Effects of Cocaine on the Central Nervous System*, by PROFESSOR D. R. BROWER.

He said we have recovered from the primary effects of the brilliant discovery of Dr. Carl Koller, that sixteen months ago electrified the medical world, and we can now reason together calmly and dispassionately about this powerful therapeutic agent.

He said he had been using in private and hospital practice preparation of the coca leaf for about six years, and for about one year past the alkaloid cocaine, and had reached certain conclusions as to its beneficial and its baneful effects on the central nervous system, that he proposed to present for discussion in his paper. He said beneficial and baneful effects, for it is as powerful for evil as it is for good.

First. *Its Effect upon the Brain.*—In small doses, that is, three or four drachms of the infusion, or one-half to one grain of the alkaloid, it is the most certain and agreeable of all cerebral stimulants. It increases the frequency of the pulse and respiration, and elevates the body temperature. It

gives a sense of well-being, a freedom from care, and a pleasant mental exaltation. The first effect of the drug is upon the cerebrum, then upon the medulla oblongata, the sense of mental exhilaration preceding the stimulation of respiration and circulation. In small doses it also stimulates the spinal cord, producing a desire for muscular activity, and increasing activity of reflexes.

The effect upon the spinal cord, according to the experiments of Dr. Alexander Bennet,* are due entirely to its effects upon the posterior column of the spinal cord; an observation that may make the drug useful in locomotor ataxia. He stated that he is now making clinical investigation in this direction.

This increased activity of the central nervous system is usually followed by a quiet, composed, self-satisfied condition of the mind and body that eventuate in sleep. These agreeable effects are accompanied with loss of appetite, frequently with nausea, constipation and diminished activity of the kidneys, of the sexual functions, and of the skin. In large doses, two to ten grains of the alkaloid, there are produced tinnitus aurium, photophobia, illusions, hallucinations, great loquacity, and a marked tendency of the mind to exaggeration and misrepresentation. If continued for some time this dose produces perversion of the affections, a disturbance of the moral emotions, a tendency to quarrel with friends and former associates, and to form alliances with persons formerly regarded as inferiors.

This state of the nervous system may become very like delirium tremens, with the same kind of muscular tremor and the same kind of horrible hallucinations. During this time the loss of appetite and diminished activity of assimilation re-

*British Medical Journal, April 18, 1874.

sult in extreme pallor of the face, dryness of the skin, extreme constipation, very much diminished urinary excretion, loss of sexual function, and great emaciation.

Second. *Cocaine in the Alcohol and Opium Inebrieties.*—Much has been written upon the use of this drug in efforts to cure this form of nerve mal-nutrition. Louis Baur, M. D.,* in an admirable article details his experience with it in a case of alcohol inebriety. He began with one-fifth of a grain, which the patient soon increased to ten grains by hypodermic injection, with the same disastrous result upon the nervous system as has been mentioned; but he expresses the opinion that cocaine inebriety was less objectionable than the alcoholic.

Dr. Erlenmeyer† gave it, in various doses, in 236 cases of opium inebriety, and expresses sentiments that entirely agree with PROFESSOR BROWER'S. He says that while cocaine does modify and mitigate the phenomena of opium-abstinence, its effect is only transient and of brief duration; he regards it of trifling value as a substitute for morphine.

Dr. J. T. Whittaker‡ reports, in an elaborate paper, the results from its hypodermic use in two cases of opium-inebriety that were satisfactory. Dr. Palmer, of Louisville, Ky., who was one of the first to advise its use in such cases, continues to be an enthusiastic advocate of the drug.

PROFESSOR BROWER'S experience is against its use in either of these inebrieties; it undoubtedly makes the withdrawal of either of these agents much easier for the patient, because its effects are so similar to opium and alcohol that he scarcely feels the need of either; but you place within his reach an agent much more rapidly disastrous and destructive to the

* Weekly Medical Review, Vol. 1, No. 12.
† Centralblatt fuer Nervenheilkund, July, 1885.
‡ Medical and Surgical Reporter, Aug. 15, 1885.

nutrition of the cerebral convolutions; an agent that will soon sink him to a degradation much lower than is possible with either of the others.

Third. *Cocaine in Melancholia.*—The best results yet obtained from the administration of the drug have been in conditions of mental depression. Dr. Jerome K. Bauduy,* in a valuable paper read before the American Neurological Society, June 17, 1885, relates a very extensive experience with the drug in melancholia. His method was to inject one grain of the muriate of cocaine, and he frequently witnessed the morose, silent, taciturn patient, a prey to the most profound grief or sadness, recover his normal self, begin to talk about his case and wonder how he could ever have experienced such gloomy ideas. He reports one case of suicidal melancholia which recovered in less than one month, and to whom he only gave five injections of cocaine. Dr. Alex. B. Shaw,† in an able paper on the uses of the drug, speaks with the same degree of positiveness of its value in the insanities with depression.

PROFESSOR BROWER'S own experience with cocaine in this form of insanity is in accord with Drs. Bauduy and Shaw. Although the bad effects of the drug upon the digestive and assimilative processes, and upon the secretions, have frequently disappointed him in its use. He has observed his valuable suggestion of giving the drug several hours before eating, in order to avoid the anorexia and nausea, but even with this precaution he has frequently found it impossible, while using it, to give that abundance of food, systematic feeding, which, after all, is the most valuable therapeutic measure in the relief of melancholia.

* New York Medical Journal, Sept. 26, 1885.

† The Weekly Medical Review, Vol. XII., No. 17.

Then again the excretory organs are often at fault; indeed, often the foundation of this form of insanity, the malnutrition of the brain being due to the accumulation in the blood of the waste product of tissue metamorphosis. In such cases the further depression added to those vital necessities by cocaine, must more than counteract the beneficial effects of cerebral stimulation. In such cases alteratives and stomachic tonics added to the treatment may make it successful.

He recalled two cases of profound melancholia. One a physician, aged 45, from a neighboring town of this State; an uncomplicated case, the result of excessive professional work in a large country practice. He received the cocaine in one grain doses three times a day, with pil. hydrargyri, aloes and strychnia. His recovery was rapid, and has continued for four months. The other case was that of a woman aged 48, from Indiana, laboring under melancholia, that seemed to have its origin in the fret and worry induced by a tumor of one of the mammary glands. Under this combined treatment recovered about as rapidly as the case detailed by Dr. Bauduy. In both these cases the drug was administered in pill form, and probably because of its combination did not interfere with the free use of egg-nog and other concentrated food in large quantities.

He has now under treatment a case of melancholia in which he is using the drug with the atomizer, using about four grains a day, on the nasal mucous membrane. The stimulating effects on the brain are manifested in a very few minutes after it is used. He is of the opinion that cocaine is the most valuable recent addition made to the therapeutics of melancholia, especially if its bad effects are guarded against in the way suggested.

Fourth. *Neurasthenia.*—Cocaine is of value in the treatment of this tedious and perplexing derangement of the nervous system. Dr. J. Leonard Corning,* in his scientific review of the cerebral form of this disease, calls it "the remedy *par excellence.*" Dr. William Oliver Moore,† in a very valuable paper on the physiological and therapeutical effects of coca and its alkaloid, gives his personal experience and the observations of others as to the value of the drug in all depressed conditions of the nerve centres, as well as its effects upon himself in various doses.

PROFESSOR BROWER'S experience coincides with the testimony of these writers, but he observes the same care in sustaining the digestive function and stimulating the eliminations as stated before. Cocaine, as mentioned in the beginning of this paper, is as powerful for evil as for good, and it requires no special prophetic gift to say that more disastrous results will be experienced by the laity from its indiscriminate use, than have been known from either opium or alcohol. Indeed, its action upon some persons in moderate doses is alarming. Dr. G. W. Kennicott‡ relates a case of poisoning from three and a third grains of the drug applied to the nasal mucous membrane, in the case of a female aged twenty-five, who had been using it for hay-fever. When he arrived she was in an alarmingly comatose condition, from which she recovered in about three hours, under the liberal use of brandy, ammonia and digitalis, with heat to her extremities and epigastrium.

DR. J. C. SPEAR,§ U. S. Navy, publishes a case of alarming coma closely simulating opium-poisoning, in a private, U. S.

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* Brain Exhaustion.

† Quarterly Bulletin, New York Post Graduate School, Vol. I., No. 1.

‡ Chicago Medical Journal and Examiner, Oct., 1885.

§ The Medical Record, Nov. 14, 1885.

M. C., aged twenty-nine, the result of the hypodermic use of ten grains in divided doses, extending over about twelve hours. The case was supposed to be opium-poisoning, and was treated with atropia, coffee, and flagellation, and in about nine hours he recovered from the immediate effect of the poison. Dr. T. H. Burchard* gives an account of a case in which the hypodermic injection of four-fifths of a grain produced a sudden and complete loss of consciousness, and in which respiration stopped, and the radial pulse was scarcely perceptible. Artificial respiration, hypodermic injection of one-twelth grain of atropia, and sinapisms to heart and extremities, relieved the patient. Fifteen minutes after the prostration the pulse was forty-eight and feeble, the respiration seven or eight, and the pupils contracted. Unconsciousness continued about twenty minutes.

DR. MERRIAM† relates the case of a gentleman who had been taking cocaine for four months for sick headache, beginning with about two grains a day, and gradually increasing till he was taking from ten to fifteen grains daily. He was very weak, with a pulse of 100, and his mind wandering somewhat as in delirium tremens. Drs. Bauduy and Shaw, in their papers already mentioned, dwell especially upon the dangers of the continued use of the drug in large doses. Professor Brower's experience is in accord with these several observers. Several cases of the poisonous effects of the drug have been under his treatment during the past six months, and he called the attention of the Society to two of these cases, both physicians:

First. The case of Dr. W., aged about thirty, of excellent

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* The Medical Record, Dec. 5, 1885.

† Quoted by the Medical Record, Nov. 28, 1885, from Ohio Medical Journal.

physique, of neurotic tendency by inheritance, who began the use of the hydrochlorate of cocaine upon the nasal and pharyngeal mucous membranes for hay-fever. He gradually increased the dose to five grains taken in one dose in the evening, when his attack of hay-fever was usually most distressing. This dose gave almost immediate relief from the hay-fever, and gave a sense of mental stimulation very like champagne. He was almost at once seized with a desire for brain-work, and would pass the greater part of the night reading and writing on professional topics, experiencing a keenness of perception and a mental vigor greater than normal. He describes his sensations during the period of activity of the drug as exceedingly delightful. Towards morning he would fall asleep, and on the next day he would have no appetite and but little desire for work, the excessive stimulation having been followed by a corresponding depression of the vital forces.

He soon found a very irregular and rapid action of the heart, and passed by rapid stages to a condition of deplorable neurasthenia, from which he is slowly recovering. He had the same derangement of digestion, assimilation and elimination that have been already mentioned. He had but little desire for food, a thickly coated tongue, a feeble digestion, considerable emaciation, urine scanty, and much of the time loaded with uric acid and urates, with dyspnœa and the irregularity of heart action heretofore mentioned. The stools for some time were chalky, skin dry and pallid, pupils dilated, reflexes, especially the patellar tendon, much increased, and muscular powers much diminished.

He continued the use of the drug about ten days, and stopped it because he feared its enslaving power. This profound depression of the nervous system followed immediately upon its stoppage. The agents used to overcome this

neurasthenia were an abundance of easily digested food, mild alteratives, moderate alcoholics, strychnia in small doses, cinchona, and the compound syrup of hypophosphites. As stated, the depression is gradually passing away, but the ten days' use of cocaine has incapacitated him for four months from the practice of his profession, and the probability is that at least three months more will be required to complete his restoration.

Second. The case of Dr. B., aged thirty-five, a man of decidedly neuropathic temperament, a hard-working, conscientious, and skillful physician, in the enjoyment of a fair but very laborious practice, with an excellent family history. Three years ago, with Professor Brower's assistance, he discontinued the use of opium, which he had been using excessively. He began the use of cocaine last May in one-eighth grain doses,having been led to believe it to be a harmless stimulant, and being at the time much run down by excessive professional work. It gave him such a sense of well-being as he had never experienced from any agent before, the sense of complete repose and self-satisfaction it produced being very much more marked and agreeable than that derived from opium. He gradually increased the dose until he consumed about fifteen grains a day by hypodermic injection. The large doses soon began to produce mental disturbance; he became irritable, quarrelsome, impetuous, and considered himself to be possessed of a mission, and that was to revolutionize the medical practice, claiming to be able to cure all diseases by the potency of cocaine. He gave it indiscriminately to all his patients. He gave it to obstetric cases and to syphilitic cases. He gave it to his wife, his three children and his mother. He was formerly a modest

man of science; he became bold and unscientific in his method, went about engaging in lawsuits, carrying a pistol and frequently brandishing it in public places, threatening vengeance on all who dared to doubt the correctness of his various extravagant statements, a perfect terror in his neighborhood. He had been a very devout member of the Roman Catholic Church, but the priest of the church could now do nothing toward restraining his wild impetuosity. He neglected his practice, and by his manner alienated those whom he did not neglect, so that very soon he lost it. Piece by piece his horse, his buggy, and his furniture disappeared, until his family was reduced to poverty. Repeated efforts to persuade him to stop the use of the drug were unsuccessful; indeed, simply resulted in making Professor Brower the recipient of his wildest denunciations and of his severest threatenings. Several physicians and druggists who made attempts to restrain him met with an equally positive rebuff. The same general deterioration as before noticed, was manifest in his case, extreme pallor and dryness of the skin, great emaciation, loss of appetite and no desire for sleep, so that for at least one week he did not assume the recumbent position.

He continued to go from bad to worse until his friends thought it best to restrain him. In pursuance of this object Professors F. L. Wadsworth and Brower appeared before the County Court and advised his removal to the Washingtonian Home. Here the cocaine was gradually withdrawn, but his mental extravagance continued unabated. He left this institution clandestinely, and is now supposed to be in Canada.

To sum up, he said:

1. Cocaine in small or moderate doses is a cerebral stimulant, but produces derangement of the digestive and assimilative functions, and diminishes the elimination of waste.

2. The use of cocaine in the alcoholic and opium inebriates is not satisfactory; while it is a more or less perfect substitute, yet its use is attended with greater danger than alcohol or opium.

3. The use of cocaine in mental depression, if we carefully guard against the depressing effects of the drug upon digestion and assimilation, will often give better results than any drug hitherto used.

4. The use of cocaine in neurasthenia is a valuable addition to the treatment.

5. The drug, if administered in large doses persistently, causes a very marked deterioration of the central nervous system, producing a profound cerebral neurasthenia, and may produce such a mal-nutrition of the cerebrum as to develop insanity.

6. Cocaine, occasionally, in doses heretofore regarded as small, produces alarming depression of the central nervous system.

PROFESSOR E. L. HOLMES opened the discussion by saying that the South American Indians eat large quantities of the coca leaf, without injury.

PROFESSOR BROWER said that in the early history of Peru the Catholic Church authorities sought to stop the use of coca in that way because of its deleterious effects upon the people. But it was impossible to do it, they used it clandestinely, and the prohibition was withdrawn. He said that used in that way the result was a similar condition of mental deterioration as that mentioned in the paper; while these people were capa-

ble, under its influence, of performing muscular efforts in climbing the hills and mountains of that country, they were a puny, sallow, emaciated people, with intellectual capacity very little above the brute creation.

PROFESSOR HOLMES said that his experience had been wholly in connection with local applications on the eye. He had seen one case, in which he had placed cocaine in both eyes for an operation, in which it was followed by considerable depression and nausea through the night, but no alarming symptoms. He had twice used it in his office for strabismus, placing a not unusual quantity in the eye, where the patient felt sick and almost slipped out of the chair, and the operation was performed with the patient lying on the floor, but he suspected it to be a fit of fainting at the sight of the instruments. He had found from experience that very minute doses will be absorbed, but had never seen the slightest influence from the amount which is usually given in the eye. It is exceedingly satisfactory in performing operations, and in removing little motes and pieces of iron or steel lodged in the cornea.

PROFESSOR C. W. EARLE said it appeared to him that when Dr. B. was in the Washingtonian Home he got along with a very small amount of the drug, very much less than he had anticipated it would be possible for him to get along with. That Dr. B. informed him that he had been in the habit of taking from 15 to 18 grains a day. After he went into the Home, the first three days he took less than three grains, and after that time did not take any. He regained his appetite very well, and appeared to improve in every respect up to the time that his wife and brother or brother-in-law came from Canada to visit him, then he was seized with an idea that he must go home, or at least to Canada, and from that time he was uneasy and did not do well. Professor Earle said that it seemed to

him that there had been more said in regard to the use of cocaine than there was any use in saying. While Dr. B. was at the Home he was not unlike an ordinary opium-eater. The depression which followed withdrawal was somewhat similar, although there were none of the symptoms of dizziness, or nausea and sneezing, which are usually present after the withdrawal of opium.

PROFESSOR SARAH HACKETT STEVENSON said that she was surprised at the deleterious effects found by Dr. Brower from the use of cocaine in hay-fever. She had had a number of cases in which it was used, without any of the symptoms mentioned in the paper. She used a 4 per cent. solution, applying with a camel's-hair brush, or simply by snuffing. Professor Stevenson said she had used cocaine a great deal hypodermically in surgical operations with good effect so far as anæsthesia was concerned.

DR. W. F. COLEMAN said there are two lines of practice in treating the narcotic habit: to cut a man off from his drug completely, at once, or to taper him off. He believed in depriving him of the drug at once. If he found a man being poisoned he would not add another dose, but stop it immediately. He knew nothing practically of the internal use of cocaine, but was surprised at the grave effect mentioned by Dr. Brower. Cohn-Mueller asserts that he kills a frog with four-tenths of a grain, but to human patients he gave indiscriminately 5 grains and it produced no perceptible ill-effect. Locally, Dr. Coleman had had some experience with the drug, and there is this point about its immediate effect, it relieves pain in acute otitis, but it is a grave question whether it does not prolong the case, and while it relieves pain it is doubtful if it is better than hot water or other remedies. In its application to the eye there was not this objection, it produces anæs-

thesia and allows almost any operation to be performed without pain; it does not prolong congestion, and gives permanent relief.

PROFESSOR D. W. GRAHAM said that he noticed Dr. Brower quoted a case reported by Dr. Burchard in the *Medical Record*, in which a patient sustained loss of consciousness and stoppage of the pulse after an injection of four-fifths of a grain of cocaine. Professor Graham doubted very much whether the bad effects were due to cocaine; we get the same effect in many patients by injecting water, or by showing them the hypodermic syringe, and he thought it probable that it was simply a fainting-fit. There was nothing in the report that would lead to any other conclusion except that Dr. Burchard says it was the result of the injection of cocaine. Professor Graham doubted the conclusion and thought it unreliable.

DR. F. M. WELLER said he had had some experience in the use both of cocaine and the fluid extract of coca. He had never used such large doses as those mentioned, but had seen that very large doses of the drug would produce unpleasant symptoms about the head, dull heavy headache, something like doses of other narcotics. Hypodermically he had used as much as five grains at one time without any unpleasant effects whatever. He was inclined to think that the real difficulty in some of these cases was that some other circumstance was overlooked. It seemed to him that some idiosyncrasy might exist that would make one peculiarly susceptible to this kind of narcotic, and it would hardly be reasonable to charge it all to cocaine. His reading of the history of the use of the drug in South America, where it originated, led him to think that it could be used a long time without injury. He thought one lesson is to be learned from the paper, viz., that no drug should be continued beyond the time of its necessity. That principle

laid down and strictly adhered to, the patient would never suffer from the deleterious use of any drug.

PROFESSOR BROWER in closing the discussion, said that Dr. B. bought cocaine wherever he could get it, and he did not know what preparation he used. The other physician mentioned in the paper used Merck's cocaine altogether. He used it for hay-fever and took five grains by inhalation every day for ten days. Professor Brower said that he did not suppose that such disastrous effects as occurred in these cases and others, would result unless there was some weakness of the nervous system; he thought possibly a person perfectly robust and with a well-governed nervous organization could take cocaine with impunity, but a person with a nervous temperament could not use this drug continuously without some such results following. He said his plan of treatment was that of gradual withdrawal, as well with opium and chloral as with cocaine. This plan could be followed with less inconvenience to the patient. He said he was well aware that cocaine was one of the most valuable additions to the therapeutics of hay-fever, it had been administered in perhaps thousands of cases in Chicago, and with few disastrous effects. As to the case reported by Dr. Burchard, it was reported as a case resulting from hypodermic injection, and it struck Professor Brower as being a reasonable result in a very susceptible individual, but it might be that the man had a fainting-fit. The case was reported in the *Medical Record* of Dec. 5, 1885; it impressed Professor Brower as being undoubtedly a case of cocaine-poisoning.

After the reading of the paper entitled "Opium Smoking," by Professor C. W. Earle, and one entitled "Hygienic Clothing" by Dr. L. L. McArthur, on which there was no discussion, the society adjourned.

BOOK REVIEWS.

CONSUMPTION: ITS NATURE, CAUSES, PREVENTION AND CURE. *By* J. M. W. KITCHEN, M. D., *Assistant Physician to the Bellevue Chest Class (O. D. Dept.); Assistant Surgeon to the Metropolitan Throat Hospital; late instructor in Diseases of the Nose and Throat at the New York Post-Graduate Medical School; Author of "Students' Manual of Diseases of the Nose and Throat;" "Catarrh, Sore-Throat, Hoarseness," etc.* G. P. PUTNAM'S SONS, *New York, 1885.*

The book begins with some general remarks on consumption, followed by a sketch of the anatomy and physiology of the respiratory organs and their hygiene. Then comes an account of the different forms of consumption; their nature and symptoms; the physical signs; the possibilities of cure, and the causes of the disease. Then follows a discussion of the principles of treatment, and a chapter on the relations of man's surrounding conditions to phthisis, including climate — the atmosphere,—heat and cold,—moisture, light,—locality and soils,—food,—physical culture,—hereditary transmission,—occupation,—dress,—social habits and surroundings,—individual habits,—ventilation and heating. The succeeding chapters are on the office of medicine in the cure of phthisis and the political duty of the people in regard to the disease, after which the book closes with some general remarks.

This extended, though not very systematic plan, covers ground enough for a large treatise instead of a duodecimo of 223 pages. The book is not even compactly written. It is in the highest degree sketchy, and many things that we would

naturally expect here are either left out entirely or are passed over so briefly as to be of little value.

There are some sensible, though self-evident remarks on the hygiene of those having phthisis, or who are predisposed to it.

The chapter on treatment is too general for the student and too commonplace for the physician.

The position of the profession with respect to the tubercle bacillus is inaccurately, not to say, unfairly stated. One familiar with the history of its investigation would certainly have written differently.

The part on anatomy and physiology of the lungs might have been as well written by a newspaper reporter.

The author writes fluently, so much so that his pen often outruns his thought.

The book contains nothing new, and is not better arranged or expressed than has often been done before. The reason for its existence, therefore, and why any one should be expected to read it, are mysteries. L. C.

A PRACTICAL TREATISE ON URINARY AND RENAL DISEASES. *Including Urinary Deposits, Illustrated by numerous Cases and Engravings. By* WILLIAM ROBERTS, M. D., F. R. S., ETC. *Assisted by* ROBERT MAGUIRE, M. D., *London. Fourth edition. Philadelphia:* LEA, BROTHERS & CO.

Among the numerous works on renal and urinary diseases now in circulation, perhaps Dr. Roberts' has the best claim to be regarded as "standard." The present edition shows evidence of having been carefully revised, and appears to be well up with the times. The article on "Micro-organisms in the Urine" has been expanded and improved, although it is by no means complete. The chapter on "Albuminuria" is an excellent *exposé* of the present doctrines regarding the efficient

causes of albumen in the urine. In this chapter we are glad to notice that something like order is at last evolving out of the chaos of professional opinion which has so long prevailed concerning albuminuria. The author amplifies and insists upon the clinical value of his "minimetric method" of testing for albumen in the urine. "Part II." treats of "Diseases of which the chief characteristic is an alteration of the urine," and includes "Diabetes Insipidus," "Diabetes Mellitus," "Gravel and Calculus" and "Chylous Urine." The section on the treatment of "Diabetes Mellitus" is very incomplete and unsatisfactory. The author's experience with strychnia and codeia is such as to excite the suspicion that neither of these remedies has received a fair and full trial at his hands. "Part III." treats of "Organic Diseases of the Kidneys," commencing with "Congestion of the Kidneys" and ending with "Anomalies of Position, Form and Number of the Kidneys." It is this portion of the work which will more particularly interest the practical physician. It is essentially a clinical work, and as such possesses a peculiar value to the busy practitioner.

We do not like the author's clumsy classification of Bright's diseases, but on the other hand the time for an irrevocable classification of renal diseases has not yet come. Again, it seems to us that so experienced a clinician as Dr. Roberts should contribute more liberally to the field of therapeutics, but then we remember that the treatment of renal affections is still contradictory and unsatisfactory to a degree almost discouraging. These faults can therefore be forgiven. "Suppuration of the Kidney," "Pyelitis and Pyonephrosis," and the consequences arising therefrom, are treated evidently by "one who knows." We especially commend the chapter on "Entozoa in the Kidneys," as perhaps the best in any one of the common text-books. Finally, in spite of the faults we have

mentioned, and the faults we have *not* mentioned, Dr. Roberts' is an eminently useful and practical book, and we congratulate the author on its deserved popularity with the profession.

I. N. D.

NEWS ITEMS.

A Sanitary Convention will be held at Howell, Michigan, under the auspices of the State Board of Health, on Wednesday and Thursday, March 3 and 4, 1886.

There will be sessions the first day at 2:00 P. M. and 7:30 P. M.; on the second day at 9:30 A. M., 2 P. M. and 7:30 P. M., standard time.

At each session of the Convention there will be addresses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated.

The President of the Convention will be the Rev. M. H. Pettit.

VICE PRESIDENTS: Hon. William McPherson, Jr., Howell; L. S. Montague, Esq., Howell; R. H. Person, Esq., Howell; Hon. Jay Corson, Howell; Hon. Neil O'Hern, Charles G. Jewett, Judge Arthur E. Cole, Dr. W. L. Wells, Dr. Robert B. Bell, Hon. E. B. Winans, Hon. William Ball, Hamburg; E. J. Hardy, Esq., Oceola; Fred. H. Warren, Esq., Fowlerville; Hon. George Coleman, Marion; Dr. C. W. Haze, Pinckney; Dr. J. J. Boyd, Hartland; Dr. W. H. Erwin, Oak Grove; Dr. W. J. McHench, Brighton.—Secretary, Dr. J. A. Wessinger.

Invitation is especially extended to health-officers to be present and take part in the discussions.

The objects of the Convention are the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness and death, and the improvement of the conditions of living.

ADDRESSES AND SUBJECTS TO BE PRESENTED AND DISCUSSED.

Welcoming address by Hon. Jay Corson, Mayor of Howell.

An address by the President of the Convention, Rev. M. H. Pettit.

Among the subjects which it is expected will be presented and discussed are the following:—

1. The sanitary condition and needs of school buildings and grounds, and of other public buildings and grounds in Howell.
2. The general subject of water-supply, and the present condition of the water-supply in Howell, the depth of wells and the details of their surroundings.
3. The disposal of slops, garbage, refuse, etc.
4. The prevention of communicable diseases.
5. Ventilation.
6. The drainage and sewerage of Howell.

The papers are expected to be original contributions, which when read are to be considered the property of the Convention, and to be left with the Secretary. Programmes will be issued before the Convention.

The Committee from the State Board of Health consists of J. H. Kellogg, M. D., Battle Creek, and Henry B. Baker, M. D., Lansing.

DR. J. A. WESSINGER, *Secretary*,
Howell, Michigan.

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ORIGINAL COMMUNICATIONS.

INTUBING THE LARYNX FOR ACUTE CATARRHAL LARYNGITIS. RECOVERY.

By ALBERT B. STRONG, A.M., M.D., *Demonstrator of Anatomy, Rush Medical College.*

[Read before the Chicago Medical Society, February 1, 1886.]

The patient, a delicate child, small for her age of two and one-half years, awoke on Saturday morning, January 17, with a slight cold. She was croupy all day. That night she had decided difficulty in breathing, which the mother relieved with home remedies, causing emesis.

The next morning she played about the house, seemed comparatively well, except that the brazen character of the cough was more pronounced. As evening approached she grew steadily worse. About 6 o'clock Dr. I. N. Danforth was called. He has since made the following note of her condition:

"When I arrived the dyspnœa was very great. With great effort the child could partially expand the lungs, the face was suffused, the eyes were dull, and the child's manner was listless and sleepy, as if partially narcotized. I advised surgical procedure at once."

The narrator saw the child about an hour afterward. Her condition then was as described above.

The diagnosis of acute catarrhal laryngitis was made.

As soon as the parents understood that there was to be no cutting, they readily consented to have the larynx intubed. This was quickly accomplished, tube No. 3 being safely introduced. The labored respiration immediately became natural, and the child passed into a quiet sleep, in which it remained for an hour.

The act of introducing the tube had caused such very free and copious expectoration of frothy, ropy mucus as to apparently, for the time being at least, have effectually cleared the parts of their obstruction. Thinking that the case might do well enough without the tube, and being accessible in case it should not, the tube was removed by drawing upon the thread which had been left hanging from the mouth. The child passed the night fairly well, though occasionally disturbed by the cough. The dyspnœa was present all the time, though not enough to cause much uneasiness to the parents, who had seen croup before.

By four o'clock in the afternoon the dyspnœa had increased to such an extent, in spite of free emesis, that the same tube was re-introduced, and the thread was left protruding from the mouth as before. Large quantities of mucus were again dislodged.

The severe symptoms were instantly relieved and the child slept quietly for two consecutive hours. During the night she was quite restless and uneasy. She did not sleep much, and drank water often, which always excited coughing, followed by free expectoration. Constant care of the nurse was required to prevent the child from removing the tube by pulling upon the thread. This accident did occur in the morning, about twelve hours after the introduction of the tube.

I saw her a short time afterwards. There was yet considerable difficulty both in inspiration and expiration, but still there was no immediate danger, so I concluded not to intube at at present. I left instructions to give an emetic dose of ipecac, should the symptoms require it. I stated that I would call again later in the day. I was summoned in great haste about four hours afterward. I found the little one much prostrated, laboring greatly for breath, with blue lips and clammy extremities. The parents thought we had better let the child alone, as they were sure it would die.

I tried to re-introduce the same tube that had been in position twice before. After several attempts, I was unable to do so, on account of the swelling that had taken place in the glottis. Tube No. 2, the next smaller size, passed in on the first attempt. Again there was free expectoration. In a few moments the thread was removed.

The change in the child was truly remarkable.

The urgent symptoms were relieved at once. From apparent imminent death she passed to a state of assured life. Quiet, refreshing, and undisturbed sleep followed.

During the next sixty-eight hours, which time the child continuously wore the tube, there was nothing of importance to notice, except an entire absence of those symptoms one would naturally expect from the presence of a foreign body in the larynx. During these three days, had any one of you seen the little patient (I am quite sure) you would not have suspected the presence of the tube, except by the absence of the voice.

There was, at times only, moderate coughing with free expectoration. Respiration was natural in every respect, she swallowed solid food readily; fluids not so easily, the latter generally produced slight coughing. Her sleep was compara-

tively undisturbed. She sat up a good share of the time playing with her toys.

At the end of the sixty-eight hours the tube was removed. From this time respiration was natural. She gained strength rapidly. In the course of a few days her voice had completely returned. Only a moderate amount of fever was present for the first three days. She had but very little medicine. I believe it was of no benefit to her.

Intubing the larynx is an operation, compared to tracheotomy, easily and quickly performed, a few moments of time only being required. It furnishes instant relief without cutting or bloodshed. It is believed to be nearly if not quite free from danger. The consent of parents can be readily obtained. The care of the patient, while wearing the tube, is nothing in comparison with a similar case after tracheotomy. The tube does not have to be removed or interfered with in any way to be cleaned. At least this was so in the case reported. The tube was perfectly free from mucus at the end of sixty-eight hours of continued use. This fortunate condition of affairs, in all probability, depends upon the uniform temperature in the larynx and the canula and inspired air.

The tubes that were first made were easily coughed up. The new ones are so constructed that this will not easily occur, and it did not happen with us. For these reasons I think intubing the larynx will commend itself to general favor, both with the profession and the people.

Removing the tube is much more difficult than introducing it. Could the thread be left attached to the tube and protruding from the mouth its extraction would be an easy matter. There are objections, however, to the presence of

the thread. It was observed that during the thirteen hours, while the child wore the tube with the thread attached, she had much difficulty in swallowing, particularly fluids; and she coughed more in proportion than during the three days subsequently, when she wore the tube without the thread.

In other words, the thread seemed to produce the principal part of the irritation. There may be good reasons for this. When the thread is passed through the hole made for it in the tube, at its junction with the anterior part of the collar, and the ends are drawn out of the mouth, it draws across the base of the epiglottis, and so interferes with its accurate mechanical work in closing the glottis. It has seemed to me that if the thread were attached to the posterior part of the collar, on the right side, it would be further removed from the base of the epiglottis and might remedy the evil. I intend to give the idea a trial at the first opportunity I may have. Another objection to wearing the thread, even if it produced no irritation, is that it requires constant watching to prevent the child from pulling the tube out.

On the other hand, one can imagine a piece of false membrane dislodged from the trachea below, and driven against or into the lower end of the tube in such a way as to entirely obstruct respiration. In such a state of affairs the presence of the thread would in all probability be the means of saving that child's life, by quickly removing the tube. It is a matter of some interest then that if the thread is to be left in position it produce the least amount of irritation.

The instruments used and here exhibited are those devised by Dr. O'Dwyer.

The set, complete, consists of five tubes with obturators, an introducing instrument, an extracting one, a gag, and a

scale which indicates the tube to be used at a given age. The tubes vary in length from one and one-half to two and one-half inches, suitable for cases from a few months to ten years of age. They are quite heavy, flattened from side to side, plated with gold, having a collar at one end to prevent slipping through the glottis, and a large bulge a little above the middle, that passes below the vocal cords and so prevents its easy expectoration. The tube in the larynx interferes to a surprisingly small degree with the functions of the epiglottis. By means of the thread attached to the tube, the operator removes it easily from the œsophagus or larynx. The obturator, slipped into the threaded tube, is screwed to the introducing instrument. By means of a simple device the obturator is removed when the tube is in position. The extracting instrument has a jointed point that fits loosely into the upper end of the tube, and is made to expand, when the tube can be easily removed.

The gag is the only part of the apparatus that will not work well. It does not expand enough; is easily crowded out by the tongue; though the jaws are lined with lead, it would be very harsh for a baby without teeth. After covering the mouth-pieces with disks of rubber it was found to be very efficient.

Caution is required on the part of the operator that the index finger shall not be wounded by the teeth, since there might be danger of inoculation, in diphtheria.

In the case here reported, to intube the larynx the child was seated on the lap of an assistant, facing the operator; another assistant held the child's head, bending its neck well back. The gag was placed in the left angle of the mouth; the index finger of the left hand held the epiglottis forward

and at the same time guided the threaded tube into the larynx. The obturator and gag were at once removed. In a few moments the gag was re-introduced, the index finger placed on the collar of the tube and the thread removed.

To remove the tube, the child was placed in the same position as on introducing it. The point of the extracting instrument was guided by the finger into the orifice of the tube. This was the most difficult part of the whole procedure. No anæsthetic was given.

533 West Monroe Street.

A COMPLICATED LABOUR. By DR. JOHN D. SKEER.

[Read before the Chicago Pathological Society, February 8th, 1886.]

Mrs. H., æt. 27, American, primipara. Labour began at one A. M. on September 1st, 1885, and at seven A. M. her family physician, Dr. E. Wyllys Andrews, was sent for. On arriving he found the os uteri slightly dilated, but could, however, make out a vertex presentation. Labour progressed from that time naturally, but slowly, until 3:15 P. M. of the same day, at which time a living, well-formed child was born. Immediately Doctor Andrews discovered the presence of a second child in the cavity of the uterus. The pains had ceased, and after waiting a half-hour, a small dose of the fluid extract of ergot was administered, which was repeated at the end of an hour. These methods failed to excite the slightest uterine contractions. At 5:30 P. M. I was called in consultation.

We found it very difficult to make out the presentation, which proved to be the tuberosity of the right ischium, occupying the middle of the superior strait. The child's pelvis was tipped toward the mother's left side. An undetached

placenta occupied the left iliac fossa, extending nearly to the os uteri.

As there was no hæmorrhage, we waited an hour and gave more ergot, but the pains continued to be irregular and inefficient, and we decided to bring down the feet and deliver at once. On introducing the hand, but one foot and one arm could be felt, the latter inclined to fall down in the plevis. In the position that should have been occupied by the left leg and arm a large fleshy mass could be felt without any definite outline. The right leg was brought down with the toes to the front, and traction was made without causing the slightest change in the position of the child—it was firmly fixed, and held as though in a vise. Strong, unremitting traction for about half an hour, at the same time rotating the child toward the mother's left side, brought the child's pelvis through the vulva with the heel to the front. The child was then delivered as in ordinary breech presentations, and was found to be well developed, dead, and not a monstrosity as was at first supposed.

As the placentæ were not expelled within an hour, the cords were traced upward; one led to the lower placenta, the other was traced upward through a small opening beyond our reach. We then realized for the first time that we had an hour-glass contraction of the uterus, which had taken place after the delivery of the first child. With careful bi-manual palpation the constriction was overcome, and the upper afterbirth removed. It was adherent throughout its entire extent. Immediately after the removal of the upper placenta the lower one became detached, and was readily brought away. The placentæ were united by a strong fibrous band about six inches in width. The patient made a good recovery, and nothing occurred in the after-treatment worthy of note.

Conclusions: Regarding the position of the second child, we had, below the constriction, the body, the right arm and leg, and, as it proved, the left thigh and leg. For on no other hypothesis can we account for the oblique position of the pelvis, unless the foot were grasped and held in the upper chamber by the contraction. The left thigh and leg were behind and completely covered by the membranous band uniting the placentæ, so that their position could not be determined. Rotating the child towards the mother's left slipped the left thigh and leg from behind the band, without detaching the after-birth. Had this latter accident happened hæmorrhage would have been a serious, if not fatal, complication.

681 Washington Boulevard.

A CASE OF ACUTE ALBUMINURIA. *By* C. H. H. HALL, P. A., *Surgeon U. S. Navy.*

[Read before the Naval Medical Society.]

The following case occurred on board the U. S. S. Ranger, while *en route* from the west coast of Mexico to San Francisco. As it is read solely to introduce an exchange of experience upon an important point in therapeutics, viz., the use of opium in albuminuria, the paper is merely an outline history of the case.

J. M., second-class fireman, age 41, native of Java, while returning from liberty on shore, and partially intoxicated, fell from the wharf, at San Diego, California, into the bay. He remained clinging to a pile, and exposed to a chill wind, for nearly an hour before his rescue by a boat from the ship. When brought on board he was considerably fatigued and

thoroughly chilled, but sober. His clothing was changed at once, and he was put into a hammock.

Next morning he appeared at sick-call, complaining of pain in the left hip, which had been bruised in falling. He had also a feverish air, and slight rise of temperature, 100.2° F. under the tongue.

Injected morphia grain ¼ near the bruise, and directed patient to remain in his hammock. At 5 P. M. temperature was 99.2° F. On the 2nd day the morning temperature was 101.6° F.; at 5 P.M. 104.2° F. He had a marked chill at 2 P. M., without complaint of local distress. Examination of the chest discovered nothing wrong. As he had recently recovered from malarial fever, the exposure was suspected to have induced a recurrence of it. He received quinine.

On the 3rd day he had one thin stool during the night; the morning temperature was 104.4° F.; he had nausea, thirst and dry, hot skin; there was no abdominal tenderness. At midday the temperature was 104.6° F., and the patient was vomiting. The urine was slightly albuminous; specific gravity was 1.019, acid, dark-colored. Fluid extract of jaborandi ℥i. caused profuse sweating, with fall of temperature to 102.2° F. at 3 P.M., and 102° F. at 5 P.M. By 8 P.M., however, the temperature had risen to 103.4° F., and the patient was vomiting again. These symptoms of suspected remittent fever were not accompanied by the usually concomitant browache. But neither this fact nor the presence of albumen in the urine, which had been lately observed in otherwise ordinary cases, was remarked as significant of error in diagnosis. The vomiting was checked by hypodermic injection of morphine over the stomach, and later quinine was resumed. On the 4th day the morning temperature was 102.6° F.; at 2 P.M., 101.8° F.; the urine passed at this time was dark colored, turbid, of specific gravity of 1.025,

and slightly albuminous. An inferior microscope revealed no casts. Quinine was continued to considerable cinchonism, and slight nausea by evening-time. The urine having become scanty, a diuretic mixture of digitalis, acetate of ammonium and acetate of potash was ordered. Later, when gastric irritability threatened, a suspension of stomach medication was ordered, and morphia gr. ¼ was injected, hypodermically, with satisfactory result. The bowels were moved normally. On the 5th day the morning temperature was 103.2° F., and the evening, 103° F. Late in the afternoon the patient complained of a "stitch" near the right nipple. Auscultation revealed over the right mammary region a rubbing sound with respiratory movements. There were no other chest signs, and the respirations were tranquil. Injected morphine, gr. ⅓, near the nipple, after which there was no recurrence of the pain. He had 36 grains of quinine during the day, and the diuretic mixture was continued. On the 6th day the morning temperature was 102.2° F. There was no stool for two days. A simple enema was, shortly after its administration, voided without the patient's consciousness. One hour later he passed, normally, a thin, light-yellow, stool. The urine at the same was rather turbid, dark-colored, acid; specific gravity 1.020, and slightly albuminous. Muttering delirium came on during the middle of the day, and the temperature rose to 104° F. Jaborandi and wet-pack brought it down to 102.4° F., and put the patient to tranquil sleep. Within eight hours after using the wet-pack he passed two thin stools and a large quantity of urine. The evening temperature was 104° F. Quinine. On the 7th day the morning temperature was 102.8° F. The patient was restless and irritable. About 1 P.M., the temperature being 101.4° F., he suddenly became maniacal, requiring considerable force to keep him in the cot. Injected hypodermi-

cally grain ⅓ of morphine. He became tranquil and rational at once, and a half hour later, after saying he felt much better, he fell into quiet sleep. As nothing in his condition indicated other than easy slumber, he was not disturbed until 6 P.M., but he was then found to be comatose, could not be aroused, and the reflex sensibility of the conjunctivæ was slight. Note the following: pulse 90, full and rather strong, not irregular; respirations 23½, of fair character, except slightly hissing stertor; temperature in axilla 100.4° F. (buccal temperature at same time yesterday was 104.° F.); skin warm, dry, and, if at all changed, rather pale; pupils small, immobile, and unequal, the left being the larger; conjunctivæ scarcely sensitive. A catheter, introduced to determine whether the kidneys were acting, brought away but a few drops of turbid, highly albuminous urine. Counter-irritation failing to arouse him by 7:30 P.M., atropine, grain $\frac{1}{20}$, was injected, hypodermically. At this time the axillary temperature was 100.6° F., respiration 23½, pulse 90. Liquids put into the open mouth were swallowed tardily, and by reflex action only; the bowels were evacuated into the bed, the conjunctivæ were quite insensitive, tracheal *râles* were present, the extremities were cool, and there was general muscular relaxation. As the pupils showed no effect of atropine at 8 P. M., *i. e.*, one half-hour after its administration, the drug was repeated in half the quantity, grain $\frac{1}{40}$. The pupils began very soon to dilate.

At 9 P. M. the respirations were 24, full and vigorous, pulse 120, of good strength but less volume, axillary temperature 101.8° F., and pupils much dilated. A catheter brought away one ounce of turbid urine with one-fourth albumen. Jaborandi, put into the mouth, was tardily swallowed with a start and a moan. Auscultation of the chest

discovered dry rubbing sounds in the left lower axillary region. Applied dry cups over the kidneys. 9:30 P. M., axillary temperature was 102.6° F., respiration 24, extremities warm, light brow-sweat from the jaborandi, ℥ss. Gave him the diuretic mixture previously mentioned. 11:30 P. M., axillary temperature 103.8° F., respiration 31, pulse 120, skin hot and dry. Patient opened his eyes when his name was called, and swallowed the diuretic, though with some difficulty, which was attributed to the action of the atropine upon the pharynx. At midnight drew off by catheter fifteen ounces of urine, turbid, acid, specific gravity 1.020, moderately (about one-sixth) albuminous. The patient now steadily improved to complete consciousness at 4 A. M., at which time the respirations were 36, pulse 120, axillary temperature 103.4° F., skin warm but dry, and kidneys active, fourteen ounces more of urine having been drawn off at 2 A. M. The diuretic was continued each two hours. 8th to 10th days. Patient visibly improved, though the temperature continued but little abated (101°–103° F.). The albumen in the urine diminished to a haze, the kidneys were active, the bowels easy, and gastric irritability absent. The pulse remained rapid, 102–111, and respirations frequent but easy. The microscope discovered in the urine, immediately after its evacuation, many minute oil globules and a large number of pellucid globular bodies, whose nature was not determined. The diuretic was continued on the 11th day. The morning temperature in mouth was 100° F., pulse 92. The patient was cheerful, took food with relish, and had no disturbing symptom. The urine was passed in good quantity, hazy only with albumen, clear, acid, specific gravity 1.019, and the patient was apparently on the verge of convales-

cence. But on account of unavoidable exposure to varying temperature in the sick-bay, it was thought best to transfer him to a hospital. Accordingly he was warmly wrapped in blankets, placed in a tented cot, which was enclosed on all sides from possible drafts, transferred to a closed ambulance wagon on the navy yard dock and sent to the naval hospital, Mare Island, about one mile distant. These precautions against chill were taken, notwithstanding his reiterated request to be allowed to walk to the wagon and thus show how much better he was. Three days after his admission to hospital he died in high fever. No necropsy.

Remarks.—Three points in this case deserve special notice:

1. The differential diagnosis of the coma.

2. The action of the drugs, jaborandi and atropine.

3. The agency of the morphine in the occurrence of the supression of urine.

1. Was the coma due to narcosis, to uræmia, or to both? These were the symptoms: slight hissing stertor, respirations 23½, pulse 90 and substantially normal, temperature (axilla) 100.4° F., one degree less than immediately before and after the attack, face rather pale than flushed. These are not characteristic of opium narcosis. To them add the actual presence of uræmic delirium before the drug was given. As to the state of the pupils, moderately contracted and unequal, it is enough to say that authorities differ upon the state of the pupils in uræmia, when the symptom is mentioned at all. I do not think the morphine had more than a secondary agency in the causation of the coma.

2. Of the drugs, I wish to note merely the considerable fall of temperature that followed the administration of

the jaborandi, and the speedy rise, the short duration of this effect being an objection to the use of the drug as a febrifuge.

I have seen but little mention of the use of atropine in connection with the therapeutics of anuria, although Harley wrote, in 1869, ("The Old Vegetable Neurotics," p. 213), "Belladonna indeed is, in the truest sense of the word, a diuretic, and more powerful perhaps than any other that we possess." Its action upon the bladder, obtunding its sensibility, may be an objection to its common use as a diuretic, but this objection loses force in the presence of suppression of urine, and of a physician with a catheter to anticipate retention. In the case related above, I think atropine was the agent of relief, and not by antagonizing the effect upon the central nervous system of a third of a grain of morphine, but by its specific action upon the kidneys.

3. It is not long ago since a question about the use of opium in albuminuria would have received but one answer, enjoining the greatest caution against the hazard of it. In 1875, however, Professor Loomis, of New York ("Lectures on Diseases of the Respiratory Organs, Heart and Kidneys," p. 450), challenged the believers in this therapeutic maxim, saying, "In 1868," etc., and in his "Text-book of Practical Medicine," lately published, this opinion in favor of the use of opium in uræmia is declared with emphasis. This declaration has led the profession to re-examine the question, and results of this study sustain Professor Loomis' opinion.

WASHINGTON, D. C., 11 February, 1886.

QUINSY AS A RHEUMATISM.

By J. SUYDAM KNOX, A. M., M. D., *Adjunct Professor of Obstetrics and Diseases of Children in Rush Medical College.*

[Read before the Chicago Medical Society, on February 1st, 1886.]

Quinsy, an acute tonsilitis, is an inflammation of the parenchyma of one or both tonsils, with their mucous coverings, glandular apparatus, and surrounding connective-tissue. It generally ends in suppuration.

Its immediate cause is invariably exposure to wet or cold.

The prominent symptoms are: a sudden onset, a high temperature (102° to 104° F.), great soreness and stiffness of the parts inflamed, exquisite tenderness on motion (such as swallowing), and great swelling and œdema of the contiguous parts.

Niemeyer, Ziemssen, Aitkins, Bosworth, Flint, Loomis, Bristow, and Bartholow all state that there is a hereditary predisposition to quinsey, and a tendency in those affected to recurrent attacks. Morell Mackenzie and E. Fletcher Ingals, in addition, state that rheumatic individuals are most liable to the disease.

The treatment most approved of by these writers may be thus summed up:

Arterial sedatives, as aconite, veratrum viride and antimony; saline cathartics; warm fomentations externally; and astringent gargles, usually with chlorate of potassa.

Empirically, quinine and cimicifuga internally and guiacum and sodium bicarbonate locally have been used with varied success.

Treatment, however, thus far has been a dismal failure. Trousseau in his inimitable way, thus expresses it:

"Inflammatory sore-throat is one of the diseases which are

at once the glory and reproach of all kinds of medical treatment—the reproach, because medicine never prevails against them; and the glory, because they terminate in spontaneous recovery, whatever we do."

I hope in the following pages to prove that acute tonsilitis, in a vast majority of cases, is most likely a rheumatic inflammation, and that, so considered, its treatment is simple, efficient and brilliant.

Four years ago I was called to see a gentleman sick with acute articular rheumatism. While rendering him professional services, his mother, who in the capacity of nurse had been much exposed, was suddenly attacked with quinsy. Without apparent benefit I gave her a saline cathartic. Also, hourly, minim doses of tincture of aconite root, and ten-grain doses of sulphate of quinine every six hours.

Forty-eight hours after the commencement of her illness inflammatory rheumatism seized her. The medicine was changed to eight-grain doses of salicylate of soda hourly. To our mutual surprise, the quinsy disappeared like magic. I was much impressed at the time by the apparent relationship of quinsy and rheumatism, and the prompt relief of the former through anti-rheumatic remedies. Later inquiries developed the facts that a second son was subject to both quinsy and rheumatism, and a daughter to repeated attacks of quinsy, and a son of this daughter to rheumatism.

Since then I have treated forty-nine cases of acute tonsilitis, —making fifty in all.

In each case careful inquiry was made as to rheumatic history, and in 45 cases, or 90 per centum, rheumatism was hereditary in the family. Five cases (ten per centum) had no rheumatic history whatever.

All fifty cases were treated at first with salicylate of soda

and aconite, and hot alkaline gargles or the insufflation of bicarbonate of soda.

Forty cases (80 per centum), all rheumatic, recovered under this treatment in from 36 to 72 hours, without suppuration. In some, the effect of the medication was almost immediate. In all, the soreness and exquisite tenderness on swallowing disappeared before the lowered temperature and diminished swelling warranted a cure.

In five cases, positively rheumatic, no benefit accrued from treatment, and all ended in suppuration in from five to eighteen days.

In five cases, positively not rheumatic, quinine was substituted for the salicylate of soda, on account of its failure to relieve. No benefit accrued, and four of the five terminated in suppuration.

Admitting the impropriety of basing definite conclusions upon so small a number of cases, the results are still too startling and positive to be due either to chance or bias, and surely merit further investigation.

Considering for a moment the etiology and symptoms of quinsy, one is impressed by the close resemblance to rheumatism.

The heredity; the proneness to repeated attacks; the immediate cause in exposure to wet and cold; the sudden onset; the high temperature, out of all proportion to the amount of inflammation; the stiffness, and exquisite tenderness on motion, —surely these are familiar features of the graver disease.

Reviewing now the cases briefly reported, one cannot fail to notice the close association of acute tonsilitis with rheumatism. Forty-five out of the fifty, or ninety per centum, possessed a rheumatic diathesis. Since Morell Mackenzie and E. Fletcher Ingals, gentlemen of large experience in throat-affections, call

attention to the same fact, it may fairly be assumed that this percentage would be maintained in a larger aggregation of cases.

I take it, that the only logical inference to be drawn is, that the diathesis creates the susceptibility to, and shapes the course of, the disease. Grant this, and quinsy becomes a rheumatic inflammation, and should be treated accordingly.

A second prominent fact in the report of cases is the prompt amelioration of symptoms under anti-rheumatic treatment. This result was so unvarying as to force the conclusion that it was accomplished solely by the remedies used.

Several patients, made wise by experience, commenced using the salicylate of soda and hot gargles as soon as an attack of quinsy threatened, and with unvarying success in aborting the illness. Still further proving the remedial value of anti-rheumatic treatment.

Negative testimony in the same direction is found in the failure of the treatment of the five cases not rheumatic. There are undoubtedly cases of acute tonsilitis which are not due to diathesis, and which specific treatment will not benefit. Such apparently are the five cases reported. The failure of anti-rheumatic medication with these five, brings out more vividly its efficacy with the forty-five.

Were I to formulate anything based on this paper it would be as follows:

1. Acute tonsilitis is generally a rheumatic inflammation.

2. Eighty per centum of such cases can be promptly cured with anti-rheumatic remedies.

3. Acute tonsilitis, not rheumatic, is not yet amenable to treatment.

The following selected cases will illustrate the above propositions:

CASE 1.—Mr. D., retail butcher, aged thirty. For three years he has had attacks of quinsy about every three months. Has had two attacks of acute articular rheumatism, and is of rheumatic family. I was called to see him in March, 1884. He had then been suffering from quinsy nearly twenty-four hours. The tonsils were both immensely swollen, deglutition was very painful, and there was constant expectoration of glairy, ropy mucus from the throat. I administered one minim tr. aconite root and eight grains salicylate of soda each hour, and with an insufflator applied bicarbonate of soda freely to the tonsils. Insufflation was to be practiced each hour, and the soda to be gargled off, a few minutes after, with hot water. Relief was not experienced until evening, about twelve hours, when he ate a fair supper. In forty-eight hours he was at work. He told me it was the first time he had escaped a ten days' illness with suppuration of the tonsils.

CASE 2.—Mrs. W., aged forty-two. Subject to rheumatic neuralgia. Her grandfather and her father died from rheumatic sequelæ. Her only brother now an invalid from valvular heart-disease and rheumatic gout. First attack of quinsy in February, 1883. She was treated by another practitioner. Suppuration and natural cure in five days. Second attack, January 2nd, 1885. Treatment—insufflation of sodii bicarb., hot gargles and hourly doses of sodium salicylate. Relief was immediate. I was notified that a second visit was unnecessary. Third attack in April, 1885. She aborted the disease with the same remedies, without my services.

CASE 3.—Mrs. P., aged twenty-nine. Subject to rheumatism and quinsy for years; whole maternal family rheumatic. Attacked with quinsy January 1st, 1884. I saw her in twenty-four hours. Administered hourly eight-grain doses of salicylate of soda. On account of her inability to open her mouth, hot carbolized lime-water gargles were used instead of insufflation

of soda. Recovery occurred in thirty-six hours, without suppuration. She has aborted repeated attacks since then by the same treatment.

Such prompt results, as in these three cases, can only be due to specific treatment.

CASE 4.—Maud P., aged twenty-two. Father's family rheumatic, but she never had rheumatism herself. She has been subject to quinsy for years. Has usually had three or four seizures annually. She was treated by me for quinsy in April, 1884, with salicylate of soda and hot alkaline gargles. Relief came in three days, without suppuration. Since then she has had no attack; each threat of the disease being successfully met by the above remedies.

This result is significant. No attack of quinsy has occurred in nearly two years, as a result of specific treatment, whereas there had previously been a seizure about every three months.

CASE 5.—Nellie M., aged thirty-five. Herself, one sister and father subject to rheumatism. In July, 1883, I was called to treat her for quinsy. Anti-rheumatic treatment as detailed above was faithfully tried for eleven days, when suppuration brought relief. The only effect of the treatment, apparently, was to prolong the suffering and retard suppuration.

CASE 6.—Edw. S., aged twenty-four. No rheumatic history whatever. I was called to treat him for acute double tonsilitis, in September, 1885. Anti-rheumatic treatment was used for thirty-six hours with no benefit, and with much distress from ringing in his ears, and nausea. I substituted quinine, ten grains, and bromide of sodium, 40 grains, in milk, each six hours. Also a gargle of lime-water, carbolic acid (1 per centum) and morphia. Two days following, hot poultices to neck. The acute symptoms were alleviated, but the disease steadily progressed and terminated in suppuration on the eighth day.

14 Loomis street.

INTUBATION OF THE LARYNX, WITH HISTORY OF CASES.

By F. E. WAXHAM, M. D., *Professor of Diseases of Children, College of Physicians and Surgeons of Chicago.*

[Inaugural Thesis read before the Gynæcological Society of Chicago, January 15th, 1886.]

In the *Medical Record* of Feb. 21st, 1885, there appeared a brief article, by E. F. Brush, M. D., on the subject of intubation, in which he referred to two or three cases of croup treated in this manner by Dr. J. O'Dwyer, of New York. Being disheartened with tracheotomy, I rejoiced at this new departure. Although intubation of the larynx had previously been attempted in France, it was entirely abandoned, and to Dr. O'Dwyer belongs the great credit of reviving this operation, and so modifying it as to make it a practical and successful procedure. The recent literature on this subject is somewhat meager. In addition to the above reference, articles of more or less value have appeared, referring to it, in the *New York Medical Journal*, of Aug. 8th, 1885; the CHICAGO MEDICAL JOURNAL AND EXAMINER, of June, 1885, of November, 1885, and the *Archives of Pediatrics*, of November, 1885.

In the *New York Medical Journal*, of Aug. 8th, will be found a most interesting article on the subject by Dr. O'Dwyer, who gives a history of his investigations, extending over a period of several years, and of the various changes made in the instruments, and also illustrations of the same.

Intubation possesses many advantages over tracheotomy.

1. No opposition is met with on the part of parents and friends; quite a contrast to the difficulty with which we usually meet in obtaining the consent to tracheotomy.

2. It relieves the urgent dyspnœa as promptly and as effectually as tracheotomy, and if the child dies there is no regret that the operation was performed, and no discredit attached to the physician.

3. There is less irritation from the laryngeal tube than from the tracheal canula. As the tube is considerably smaller than the trachea, it does not press upon it firmly at any portion, excepting at the chink of the glottis.

4. Expectoration occurs more readily than through the tracheal tube.

5. As the tube terminates in the throat, the air that enters the lungs is warm and moist from its course through the upper air-passages, and there is less danger of pneumonia.

6. It is a bloodless operation.

7. It is more quickly performed, and with less danger.

8. There is no open wound that may be the source of constitutional infection.

9. Convalescence is more rapid, as there is no ghastly wound to heal by slow granulations.

10. The patient does not require the unremitting care of the physician, as in tracheotomy.

11. I believe it to be a more successful method of treating croup, either diphtheritic or membranous, than tracheotomy.

The only objection to the operation of intubation is the difficulty of performing it. This objection can be overcome by continued practice upon the cadaver. While the inexperienced will have great difficulty in entering the larynx, and will almost invariably pass into the œsophagus, yet, with sufficient practice upon the dead body, the operation may be performed quickly, easily and safely; indeed, one trial and ten seconds should be all that we should ask for. The

operation of removing the tube is even more difficult than its introduction, and calls for the greatest skill and caution. In only three cases, however, have I met with difficulty. In one case the tube, which was one of the primitive ones, slipped into the trachea, but was removed, under ether, at the first attempt. In another case the child was but twenty months of age, and the tube was held so closely and tightly that it was removed with difficulty, and ether was given in this case. In another case the child was so nearly dead that no gagging occurred, and consequently the head of the tube did not rise from the vocal cords, and removal was difficult, although accomplished without ether. With these three exceptions, the tube was extracted quickly and without difficulty. These objections, although serious, and objections that will necessarily confine the operation to the hands of the most expert, are the only ones that have appeared in an experience of fourteen cases coming under my care. In regard to the comparative value of tracheotomy and intubation, we would say that as yet we have not sufficient data, but the outlook for the new operation is most encouraging, so much so that I shall never again, I am fully convinced, perform tracheotomy for membranous or diphtheritic croup. Dr. O'Dwyer, in perfecting and modifying these instruments for intubation of the larynx, has accomplished one of the greatest triumphs of modern surgery. I would beg leave to submit a report of the following cases coming under my observation. It has been my pleasure to perform this operation seventeen times, upon little patients who in every instance were in imminent danger of suffocation from either diphtheritic or membranous laryngitis. Of this number, eight have made perfect and complete recoveries. The ages va-

ried from 16 months to 5 years. Six cases were 3 years or under, and seven cases were diphtheritics—two conditions under which tracheotomy is rarely successful. The ages of the successful cases were 5 years, 20 months, 2 years and 2 months, 5 years, 5 years, 3 years, 4 years, and 5 years, respectively. All were in imminent danger of suffocation, and in five cases tracheotomy had been proposed but declined. This is certainly a grand record for the new operation. Two questions will naturally arise in considering these statistics. First, were the cases as serious as represented? and, second, might not these cases have recovered without the operation? In answer to these queries, it may be said that in every case muco-pus and shreds of false membrane were rejected, showing that they were all cases of diphtheritic or membranous laryngitis; and, second, all, with two or three exceptions, were seen by other physicians, who invariably predicted a fatal termination, unless relieved by surgical measures. It is unnecessary to refer to the unsuccessful cases, for it may be taken for granted that they were serious ones. Of the successful cases, patient No. IV. was attended by Dr. Behrend, who sent for me to perform tracheotomy, but intubation was substituted. Dr. Behrend, as well as myself, was fully convinced that the child must soon have died without surgical aid. This patient was subsequently seen by Dr. H. T. Byford.

Case VI. was seen in consultation with Drs. Dahlberg and Appleby; both physicians were positive that danger was imminent, and that the patient must die within a few hours. Dr. Helm also witnessed the operation, and can testify to the critical condition of the patient.

Case VIII. was attended by Dr. Kossakowski, who ex-

pressed the opinion that the only hope was in an operation. The patient was also seen by Dr. Sullivan on one occasion, when it became necessary to reintroduce the tube; and on still another similar occasion by Dr. D. S. Clark, of Rockford.

Case XI. was attended by Dr. Valin, who stated that it was an impossibility for the child to live until morning without an operation,

Case XIII. was pronounced utterly hopeless by both Dr. C. E. Caldwell and Dr. Ogden.

Case XIV. was in the most critical condition, and Professor Quine stated that "any rational physician would positively have said that the child could not have lived longer than two or three hours."

I regret very much that I have no corroborative evidence in Case XVI., but I was fully convinced that there was not the least hope of recovery.

The most brilliant statistics of tracheotomy have been presented by Ranke, of Munich, who presents a series of cases, a trifle more than one-half of which recovered. Ranke recommends the early operation, and confesses that he has operated upon some cases that would have recovered without it. When we consider his statistics in the proper light they do not seem so brilliant, and correspond more nearly to our own statistics of tracheotomy. It must be remembered that by the most prompt and judicious treatment we will save one-third of our patients by medical measures, even if tracheotomy is abandoned. We may, therefore, consider that Ranke, in operating early—"as soon as the vocal and respiratory symptoms of laryngeal invasion become manifest"—operated upon one-third of his patients unnecessarily, as that proportion might have recovered without it. Sub-

tracting one-third the number unnecessarily operated upon from one-half the number saved, and the result, one-sixth, will represent the true proportion saved. Not only this, but again, by operating early we shall operate upon a certain proportion of cases of severe spasmodic laryngitis. Often it is only by watching a case carefully from day to day that we are able to make a positive diagnosis. By operating upon these cases we will save every one of them; but ninety-nine out of every hundred would recover without the operation. It is an interesting fact that all of our most successful and brilliant tracheotomists advise the early operation.

The first five cases were reported in the CHICAGO MEDICAL JOURNAL AND EXAMINER of November, 1885.

CASE VI.—I was called November 3d to see an infant of twenty months, suffering from membranous laryngitis. From Dr. Dahlberg, the attending physician, I obtained the following history:

He was taken sick on October 29th, with slight fever, vomiting, soreness of the throat, and an occasional cough, indifference for food, but great thirst. The parents, thinking that he had taken a slight cold, gave him castor oil and hive syrup, etc., until October 31st, when Dr. Dahlberg first saw him. He found marked fever, temperature 102½° F., pulse 140; respiration accelerated, slight cough, and hoarseness of the voice. Expectoration scanty and tenacious in character. On examining the throat the mucous membrane of the fauces and tonsils were very much inflamed, and the sub-maxillary glands enlarged, but no membranous exudate could be detected. The mother, however, informed him that she had observed two white spots in the throat the day before. He diagnosed pseudo-membranous croup, and gave a mixture of quinine and tannic acid in simple syrup every three hours, alternating with

a solution of chlorate of potash, tincture of iron and glycerine and a spray from an atomizer of lime water and carbolic acid.

November 1st, 9 A. M.—Temperature 101° F., pulse 140, respiration 38. Very little change. Fever less, otherwise no improvement. The hoarseness and cough more marked, and slight dyspnœa.

To facilitate the removal of muco-pus and shreds of false membrane from the throat and bronchi, he gave an expectorant mixture of muriate of ammonia, syrup of ipecacuanha and syrup of wild cherry bark, and during the night an emetic of sulphate of copper, and also every four or five hours the inhalation of slacking lime.

November 3d, 9 A. M.—Temperature 100° F., pulse 145, respiration 46. The pulse more frequent and weak; indeed, all the symptoms growing worse. Cough very much suppressed and hoarse, respiration greatly impeded, great dyspnœa, marked abdominal breathing and dilatation of alæ nasi. While in this condition I was called to perform intubation. It was evident that the child could live but a few hours unless relieved by surgical interference. Assisted by Drs. Dahlberg, Appleby and Helm, the laryngeal tube was quickly and easily introduced, requiring but a few seconds. The bridle securing the tube was removed and the result was magical, so far as the breathing was concerned, relieving the intense dyspnœa at once. After a few minutes he seemed to suffer but slightly, and in less than half an hour was sleeping quietly. At 5 o'clock the child awoke and called for food and water, and seemed to feel quite well. Temperature 100° F., pulse 140, respiration 36.

November 4th, 9 A. M.—Temperature 100½° F., pulse 136, respiration 36. 2 P. M.—Temperature, 101° F., pulse 140, respiration 36.

November 5th—Child has been sleeping nearly all night, and the appetite seems good. 9 A. M.—Temperature 100½° F., pulse 132, respiration 36. 8 P. M.—Temperature 99½, pulse 130, respiration 36. Cough seems more soft, but the respiration seems more noisy. One grain of quinine was given every three hours.

November 6th, 9 A. M.—Temperature, 99½° F., pulse 130, respiration 34. Breathing much easier and discharges considerable mucus by coughing. Slept from 10 P. M. until 3 A. M., when he awoke, called for food, and slept again until 8 A. M. 8 P. M.—Temperature 99¾° F., pulse 130, respiration 36.

November 7th, 9 A. M.—Temperature 99½° F., pulse 130, respiration 36. Has slept all night, and is breathing easily. At 2 P. M. three careful attempts were made to remove the tube, but being unsuccessful ether was given and no difficulty was experienced. The breathing for the following two hours was slightly impeded, with frequent coughing, discharging mucus and shreds of false membrane.

8 P. M.—Temperature 99½° F., pulse 134, respiration 36. Breathing easy and quite as good as with the tube. Quinine continued.

November 8th, 9 A. M.—Temperature 100° F., pulse 120, respiration 36. Has slept nearly all night. Awoke twice and inquired for food and drink.

8 P. M.—Temperature 98¾° F., pulse 120, respiration 36. Breathing not quite so easy, and less discharge of mucus in coughing. Appetite fair. Ordered an expectorant cough mixture.

November 9th, 9 A. M.—Temperature 99° F., pulse 130, respiration 40. Respiration more hurried and obstructed, indicating a proliferation of membrane.

8 P. M.—Temperature 100° F., pulse 130, respiration 42.

Breathing becoming laborious and noisy. Child very fretful. No appetite. Applied flaxseed poultice to chest and back. Gave enemas of warm milk and brandy every three hours.

November 10th, 9 A. M.—Temperature 100¾° F., pulse 130, respiration 46. Breathing laborious and exhausting. Voice and cough again becoming suppressed.

At 10 P. M. the tube was re-introduced without difficulty, when immediately the respiration became easy, and the child, after coughing up some mucus and shreds of membrane, slept quietly.

8 P. M.—Child sleeping. Temperature 99½° F., pulse 120, respiration 36.

November 11th, 9 A. M.—Temperature 99° F., pulse 120, respiration 36. Child slept well all night. Drank a cup of milk, a little beef tea and brandy; not so fretful.

8 P. M.—Temperature 101½° F., pulse 136, respiration 40. Child weaker and more feverish. Very little appetite. Continued enemata of milk and brandy every three hours.

November 12th, 9 A. M.—Temperature 98½° F., pulse 120, respiration 36. Breathing easy; little cough; appetite poor. Continued milk, quinine and brandy.

12 M.—Tube was again removed without difficulty. Coughed for a short time, expectorating mucus and shreds of false membrane.

8 P. M.—Temperature 99½° F., pulse 130, respiration 40. Has only slept one hour during the day, is very fretful, and will take but little food. Gave milk enemata with brandy every three hours, and port wine and water for drink.

November 13th, 9 A. M.—Temperature 99½° F., pulse 130, respiration 40. Slept well all night; breathing is easy, but the child very weak. Milk and brandy enemata continued.

8 P. M.—Temperature 98° F., pulse 120, respiration 36. Has

slept six hours during the day. Drank a pint of milk and some chicken broth. Is better, but complains of soreness of the throat; voice hoarse.

November 14th, 9 A. M.—Temperature 98° F., pulse 120, respiration 34. Appetite better and interested in play.

8 P. M.—Temperature 98½° F., pulse 120, respiration 34. Sleeps well and takes food better. Voice still hoarse.

November 15th, 9 A. M.—Temperature 98° F., pulse 100, respiration 30. Much improved. Appetite quite good.

November 16th, 9 A. M.—Temperature 98° F., pulse 100, respiration 30. Child decidedly better, but the voice still hoarse.

December 4th.—Child about the house and in its usual health, with the exception that the voice continues somewhat hoarse. This is the youngest patient that has yet been saved by intubation.

CASE VII.—November 9th I was called to perform intubation upon a little child four years of age, suffering from severe constitutional diphtheria with invasion of the larynx. The child had been sick for five or six days with diphtheria, and the larynx had been involved two days. The child was in imminent danger of suffocation. Ably assisted by Dr. Bosworth and Prof. Nelson, tubage was performed without the least difficulty, and with immediate relief to the urgent symptoms. The child died easily forty-eight hours later from the profound constitutional infection.

CASE VIII.—November 13th I was called by Dr. Kossakowski to operate upon a child two years and two months of age, suffering from membranous laryngitis. The child was in a desperate condition, and could have lasted but a short time. On account of the distance of the patient from me and the danger that might result if the tube was rejected, a size larger

than was appropriate for its age was introduced, in order to make sure of its retention. This was worn easily and with great comfort for four days, when it was removed without difficulty. The child was unable to breathe comfortably without it, and fearing the result of the continued pressure of the large tube upon the vocal cords a smaller one was introduced. This was done with the assistance of the father and Dr. Kossakowski very quickly, not requiring over ten seconds. Again there was the immediate relief from the alarming symptoms.

On the fifth day this tube was rejected and we were summoned in great haste. The child was again in a most critical condition. The respiration was greatly impeded, the countenance pale and anxious, dyspnœa intense and the pulse feeble and rapid. The larger tube was again reintroduced, again violent spasmodic coughing occurred, with expectoration of quantities of ropy mucus and shreds of false membrane. The silk bridle was removed, and again all the alarming symptoms subsided. On the ninth day the tube was easily and quickly removed, and although the respiration was somewhat embarrassed it was thought best not to reintroduce the tube. In about three hours we were again summoned in great haste, and on reaching the child it was found nearly asphyxiated. The lips and fingers were blue, the face livid, and the extremities cold. Respiration was carried on with the greatest difficulty. The child would soon have been dead. The tube was quickly reintroduced, small pieces of membrane rejected, and again the little patient was saved from impending death.

The child took abundance of nourishment, and wore the tube without annoyance. On the thirteenth day, assisted by

Dr. Kossakowski, of this city, and Dr. D. S. Clark, of Rockford, the tube was again removed without difficulty. Respiration considerably embarrassed without the tube. An emetic was given which acted promptly, but only increased the difficulty of respiration. After waiting one hour and a half, during which time the dyspnœa gradually increased, it was considered unsafe to leave the child, and the smaller tube was again reintroduced. On the fourteenth day this tube was rejected, but it was not necessary to reintroduce it. The child made a rapid and satisfactory convalescence.

CASE IX.—Nov. 16th, Dr. Kossakowski again called upon me to perform intubation upon a little child three years old. It was a most unfavorable case. The family were crowded in two small rooms, and the child was found lying on a feather mattress on the floor in the corner of the kitchen. It was in the last stages of suffocation from membranous croup. One of the neighbors held the child in the lap, and with the assistance of the doctor intubation was quickly performed. The child revived and the next day took dinner with the family. The child died forty-eight hours later from extension of the exudation below the tube.

CASE X.—Nov. 20th I was requested by Professors Cassleberry and Hatfield to see a boy of five years in the very last stages of membranous croup. The patient had been sick about eight days, and twice there had been reformation of the membrane after its complete rejection. At this time there was evidence of extensive exudation into the bronchi. Both physicians pronounced the case a most unfavorable one, and it was scarcely expected that intubation would give relief. However, the operation was quickly performed and large quantities of muco-

pus and softened membrane expelled through the tube. Contrary to our expectation, great relief was given. The patient died about fifty hours after the operation with evidence of reaccumulation of membrane in the bronchial tubes together with pneumonia of the left lung. In this case considerable difficulty was experienced in removing the tube; several attempts were necessary, but it was extracted without ether. The child was so near death that an anæsthetic was not admissible, and it was hoped that by removing the tube the respiration might improve, but the unfavorable symptoms were even more distressing, and death occurred two hours later.

CASE XI.—Nov. 21st I was called to see Charley B., a boy of five years, a patient of Dr. Valin, who kindly gave me the following history: He was taken ill with a severe form of pharyngeal diphtheria, Nov. 7th. Both tonsils and uvula were covered with diphtheritic membrane. The temperature for several days remained at 102½° F., and the pulse 130. On the 18th the membrane disappeared from the fauces. On the 19th there was evidence of extension of the disease into the larynx. On the 21st the child was in imminent danger of suffocation. The dyspnœa was intense, and the child was struggling desperately for breath. He was covered with perspiration, and the features were livid and anxious, and the pulse was becoming weak and very rapid. The child certainly could have lasted but a few hours longer. With the aid of the father and Dr. Valin intubation was performed, requiring but a few seconds. There immediately followed severe spasmodic coughing, with expectoration of quantities of muco-purulent matter and shreds of membrane. When the silk bridle was removed the respiration became

easy, the cough subsided and the child passed into a quiet natural sleep.

Temperature, 102° F.; pulse, 120; respiratinn, 20.

Nov. 22nd, 4:30 A. M., temperature, 102° F.; pulse, 120; respiration, 24. 8 A. M., temperature, 98½° F.; pulse, 100; respiration, 22.

Nov. 23rd, at 4 A. M., the tube was expelled during a violent attack of coughing. The dyspnœa at once returned, and when seen, the child was again laboring desperately for breath. The tube was reintroduced, and again all violent symptoms subsided. At 9 A. M., temperature, 100½° F.; pulse, 120; respiration, 22.

Nov. 24th, temperature, 100½° F.; pulse, 120; respiration, 22.

Nov. 25th, temperature, 100° F.; pulse, 120; respiration, 24.

Nov. 26th, at 4 A. M., the tube was again expelled, this being the fifth day after its first introduction. As the respiration was comparatively easy the tube was not reintroduced. Temperature, 98½° F.; pulse, 126; respiratinn, 24.

Nov. 27th, temperature, 100° F.; pulse, 120; respiration, 24.

Nov. 29th, temperature, 98½° F.; pulse, 108; respiration, 22.

Dec. 5th, child entirely well, and but very slight hoarseness of the voice.

CASE XII.—Nov. 30th, Prof. Holroyd called me to perform intubation on a little boy of four years. The child had been sick for several days with diphtheritic croup, and when seen was failing rapidly. The tube was quickly introduced with the usual relief. About 1 A. M., Dec. 1st, a portion of membrane, about 1½ inches in length by ½ in. in width, became detached and completely occluded the tube. As a result, both the tube and membrane were rejected. We were at

once summoned, but before we were able to reach the child he was nearly asphyxiated. The tube was again introduced with prompt and great relief. The respiration was considerably accelerated but easy, and the child was left sleeping. After giving explicit directions in regard to the use of the instruments they were left with the doctor. About 4 A. M. the tube was again rejected. We were at once summoned, but before arriving Professor Holroyd had succeeded admirably in introducing the tube. The respiration, although less easy, was quite rapid, the skin hot and the pulse very rapid. There were evident symptoms of congestion of the lungs. A hot mustard foot-bath was given, warm flaxseed poultices covered with oiled silk applied to the chest and four-grain doses of quinine given, alternating with 1-32 gr. of bi-chl. mercury. The child died at 4 P. M., very easily, evidently from congestion of the lungs.

CASE XIII.—Through the courtesy of Dr. C. E. Caldwell, I was called, Dec. 2nd, to see Mark H., a boy of five years. The doctor has kindly given me the following history: The boy had been sick one week with the measles when, as the eruption was fading, diphtheria occurred. The pharynx was well covered with the diphtheritic deposit, which rapidly extended into the larynx. Dec. 2nd, the child was in great danger of suffocation, and certainly could have lived but a few hours. With the assistance of Dr. Caldwell and Dr. E. J. Ogden, the operation of tubing was quickly accomplished. Large quantities of mucuo-pus and broken down membrane were expelled and the patient was soon sleeping quietly. 1-32 of a gr. of bi-chl. mercury had been given every half hour and was continued, which constituted the only treatment.

6 P. M. Pulse, 150; temperature, 102° F.; respiration, 30. 10 P. M. Pulse, 150; temperature, 101° F.; respiration, 24. Takes nourishment well.

Dec. 3rd, 9 A. M. Pulse, 140; temperature, 100° F.; respiration, 24. Rests well and takes nourishment in liberal quantities. 9 P. M. Pulse, 150; temperature, 99° F.; respiration, 24.

Dec. 4th, 9 A. M. Pulse, 136; temperature, 99° F.; respiration, 24. 9 P. M. Pulse, 130; temperature, 98½° F.; respiration, 24.

Dec. 5th. The child was seized with violent coughing and vomiting and the tube was rejected. Pulse, 120; temperature, 98½° F.; respiration, 24.

Takes nourishment plentifully. Voice quite hoarse.

Dec. 6th. Continues to improve.

Dec. 7th. Is convalescent.

CASE XIV.—Dec. 3d I was informed by Dr. Dahlberg that he would send a little patient, suffering from membranous laryngitis, to the hospital of the College of Physicians and Surgeons, for me to perform intubation upon. The child, four years of age, had been suffering for three days, and the doctor thought, as the surroundings were most unfavorable, that his chances would be far better at the hospital than at home. The people were advised to take the child in a closed carriage, but feeling too poor to afford it, the little patient was taken in a street car, a distance of several miles. The child arrived in a most critical condition, and those who witnessed the operation certainly will testify that the patient could not possibly have survived more than a very few hours. Assisted by Dr. Dahlberg and Prof. Quine, the operation was performed in the presence of the class. The

tube when introduced was entirely filled and occluded with false membrane. After struggling for a moment the tube was rejected, a fortunate occurrence, as the child could not have lived with the tube so completely occluded. As this tube was passed with some difficulty, a size smaller was quickly introduced and all alarming symptoms subsided.

Dec. 4th, 9 A. M., temperature, 100° F.; pulse, 156; respiration, 36. 3 P. M., temperature, 100¾° F.; pulse, 137; respiration, 26.

Dec. 5th, 9 A. M., temperature, 101½° F.; pulse, 150; respiration, 22. 5 P. M., temperature, 100¾° F.; pulse, 142; respiration, 26.

Dec. 6th. The inflammation had extended upward into the nasal passages and the left nostril was filled with a bloody muco-purulent secretion. 9 A. M., temperature, 100° F.; pulse, 150; respiration, 32. 3 P. M., temperature, 101½° F.; pulse, 155; respiration, 40.

Dec. 7th, 8 A. M., temperature, 101½° F.; pulse, 140; respiration, 36. 1 P. M., temperature, 102° F.; pulse, 150; respiration, 48.

At 6 P. M., assisted by Prof. Earle, Dr. Dahlberg and Mr. Anderson, the tube was quickly and easily extracted, after remaining in position a little over four days.

The patient remained very feeble for the next few days, but gradually the strength returned, and the child was discharged from the hospital Dec. 14th entirely out of danger. In this case the treatment consisted of 1-32 gr. of bi-chloride of mercury for the first two days, given every hour; for the subsequent two days less frequently, and after the removal of the tube, full doses of iron and quinine.

CASE XV.—Dec. 9th I was called to see a little boy of

four years, and learned that he had been sick for nearly a week. The child had sore throat, white spots on the tonsils and soft palate, and considerable fever. Two days before, the cough became croupy and the respiration embarrassed, and the father said that during the previous night he thought the child would choke to death every minute. The child had been under domestic treatment. Upon inspecting the throat, ulcerations were observed upon the uvula and both tonsils, covered by a thin coating of membrane. The child was in great danger, the voice and cough suppressed, deep sinking in of the tissues at the base of the thorax, pale and covered with perspiration. As the symptoms admitted of no delay and as no physician was at hand, the mother courageously held the child in her lap, while the father held the head, the gag placed in position, and the tube quickly introduced, requiring about ten seconds. Acting upon a suggestion of Dr. O'Dwyer, a salve containing 25 per cent. of nitrate of silver was thoroughly coated over the tube just below the head. The action of the astringent upon the false membrane and the tissues about the vocal cords, I am convinced was beneficial, although considerable irritation was produced. There is one objection to the use of nitrate of silver in this manner. It destroys the gold plating of the tube. The other astringents will perhaps serve as useful a purpose without this objection.

Just before the tube was introduced the pulse was 140; respiration, 30; temperature, 101° F. At 7 P. M., pulse, 140; respiration, 40.

Dec. 10th, 10 A. M., pulse, 140; respiration, 40. 9 P. M., pulse, 140; respiration, 48; temperature, 102° F.

Dec. 11th, 9 A. M., pulse, 130; respiration, 36; temperature, 100½° F. 9 P. M., pulse, 120; respiration, 32.

On the 12th, three days after intubation was performed, the tube was removed without difficulty. At this time as well as when the tube was first introduced considerable muco-pus and shreds of false membrane were rejected. It became unnecessary to reintroduce the tube and the child made a rapid and complete recovery.

CASE XVI.—Dec. 11th I was called by Dr. Pierpoint, of Englewood, to perform intubation upon a little patient three years old. The child had been suffering several days with a bad form of diphtheria which finally invaded the larynx. When intubation was performed the child was in imminent danger of strangulation.

The operation gave entire relief, but the patient died forty-eight hours later from the occurrence of pneumonia and from the diphtheritic infection.

CASE XVII.—Jan. 4th. Through the courtesy of Prof. Quine and Dr. Willard I was called to see a little girl five years old in the last stages of membranous croup. It was evident to all that the child must have died in a very short time. Professor Quine was positive that the patient could not have lived until midnight. When the tube was introduced a large piece of membrane was rejected and all the alarming symptoms subsided. The next day the child was up and playing about the room nearly all day. The little patient experienced no inconvenience from the presence of the tube excepting when she swallowed liquids. Every day she was about the room, and on one occasion even helped her mother to wipe the dinner dishes. On the third day the tube was removed with the assistance of Dr. Willard, of this

city, and Dr. Kimball, of Rockford. There was no necessity of reintroducing the tube, and the child made a rapid recovery. This had been the most remarkable case that has yet come under my observation.

Limited as is this experience, I feel that it is sufficient to establish this as a legitimate operation, and one that is destined to entirely supersede tracheotomy.

3449 Indiana Ave.

EDITORIAL.

THE COOK COUNTY INSANE ASYLUM.

The report of the STATE BOARD OF CHARITIES, recently published, regarding the abuses at the Cook County Insane Asylum, contains some important information and merits careful reading and thought. The first portion of the report deals with evils and abuses as they were found to exist, and were brought out by the testimony given before the committee. Political considerations were found to largely govern the appointment of employés. Conflicts among officers, lax discipline and insubordination are among the evils mentioned. It was found that supplies cannot be easily and quickly procured, and that the patients suffered various "inconveniences" in consequence. This latter statement refers to the sworn testimony of the assistant physician, that at one time over fifty patients suffered from scurvy, and as the result deaths were common. It will be readily admitted that these results were at least "inconvenient" to the patients.

It is not, however, so much with the findings of the committee, which are in the main correct and in accordance with the testimony, as with the remedies suggested, that we take issue.

First, the suggestion that the State take charge of the institution, is disposed of by the Board as impracticable at the present time, because the proximity of the county house and the small size of the county farm are insuperable objections. The facts that the institution has no adequate water-supply and but very imperfect drainage, are much more vital considerations, in our opinion.

Second, that the County Commissioners should place the care of the institution in the hands of a Board of Trustees, who would organize and govern the place substantially as State institutions are governed is recommended This admirable plan having succeeded so well in many of our State institutions, it is but natural that it should have the earnest support of the State Board of Charities. Unfortunately the problem is quite different. With the State these matters are regulated by the statute, and the legislature cannot interfere except by an amendment to the organic law. The constitution directs that the affairs of Cook county shall be managed by a board of fifteen commissioners. Their power is absolute: they appropriate funds, purchase supplies, pay the bills, audit their accounts, and finally, but not least, appoint the grand jury, the only body which has authority to impeach them. Any limitation of their powers is purely voluntary and may be abridged or altered at any time only by themselves. Is it to be supposed that all of the Commissioners will voluntarily surrender their control of our largest public charity to the care of a few men whose only aim would be the benefit of the unfortunate? How long would men of character and integrity be found willing

to retain such positions, after influence was brought to bear in the interests of "the party?"

Third, that the State Board of Charities assume the relation of trustees as outlined in the above plan. This is decidedly the best suggestion, as the State Board is, by its character and manner of its appointment, beyond the reach of any local influence. But this plan is open to the objection that so much control as is surrendered is only voluntary, and may be entirely abrogated by a simple majority vote at any meeting. Any dispute that may arise could be easily settled by the County Commissioners withholding the appropriation, when the management must come to terms or give up their control.

The fact remains that ever since the establishment of the "Cook County Crazy-House," over thirty years ago, the management of that charity has been a disgrace. It would seem as if the only remedy is for the State to establish one or more additional hospitals, and to take charge of the insane now in the county house. The facts regarding the Cook county insane are true of most of all the insane now in county receptacles. The State cares for at least seventy per centum, and there is no reason why its care should not be extended to all.

County provision for the insane has always proved from 30 to 50 per centum more expensive than State care. The annual saving to the tax-payers of this county would build a new hospital in a few years, besides conferring an inestimable boon upon a neglected and unfortunate class of our community.

THE MAY MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY.

The eminently successful character of the Eightieth Annual Meeting of the MEDICAL SOCIETY OF THE STATE OF NEW YORK, recently held in Albany, places in conspicuous and unpleasant relief the usual features of the annual gatherings of the ILLINOIS STATE MEDICAL SOCIETY. The papers read in Albany were in the large majority of cases of great practical interest, and founded upon personal observation and experiment. There was a refreshing absence of reports of chairmen of Sections, embodying the progress of medical science in their respective departments. These reports, demanded by the constitution of our State Society, degenerate only too frequently into compilations from the various American medical journals, which every practitioner receives. Even admitting that the report be prepared conscientiously and in conformity with the design of the framers of the constitution, the space of twenty minutes,—the period of time allotted to each chairman,—is inadequate to the demands of the occasion. But the necessity for systematic reports, on progress of the medical science, does not exist at the present day, as it did even a few years ago. With the appearance of the *Index Rerum*, the various *Retrospects*, *Digests*, *anelectics*, and *special departments* in our leading periodicals, has not the preparation of laborious *résumés* of novelties become a work of supererogation? Would not the critical discussion of a single topic, or the narration and analysis of an instructive case prove of greater interest and importance under existing conditions?

At the Chicago meeting, nearly two years ago, S. Walter Hay presented the following preamble and resolutions:

WHEREAS, In the preamble to the resolution determining the formation of the State Medical Society it is set forth, as one of the objects of the Society, that "it shall supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge, etc.," therefore, be it

Resolved, That a prize of $100.00 be offered by the Society for the best report of original investigations into the Etiology, Pathology and Treatment of Diphtheria.

That a second prize of $100.00 be offered for the best tabulated report of not less than ten cases of any form of disease under the professional care of the reporter.

The resolutions were adopted, and Drs. Walter Hay, H. A. Johnson, and John E. Owens were appointed a Committee on "Prize Essays." This Committee made no report at Springfield last year, for the reason that there were no candidates for the honors. The sum of one hundred dollars, of course, is entirely inadequate to the expenses involved in any investigation of Diphtheria, but the second prize ought to have enlisted interest. As informed at present, the Society continues to offer both prizes under the same conditions.

Probably no state west of the Alleghanies is of as great interest to the general profession of the country as Illinois. This fact is probably due to the important acts in medical legislation secured within recent years, under great obstacles, by the determined and united efforts of the local profession. Much remains to be done in this important field. The hands of the members of the State Board of Health must be upheld in the prosecution of their arduous labors.

Fortunately the Demonstrators' Association no longer requires aid in securing anatomical material. But then, legislation with reference to the insane is in a very chaotic state, as recent developments in the care of this unfortunate class in Cook County abundantly demonstrate.

DOMESTIC CORRESPONDENCE.

CHLORAL HYDRATE IN THE TREATMENT OF THE HYPEREMESIS OF PREGNANCY.

CHESTERTON, INDIANA, February —, 1886.

TO THE EDITORS OF THE *Chicago Medical Journal and Examiner.*

Gentlemen:

Having noticed that chloral hydrate is not especially mentioned in medical literature as a remedy for alleviating that distressing, and at times uncontrollable, affection, the vomiting of pregnancy, it may not be amiss that I note my experience with this remedy.

Several years ago I was called to treat a patient affected with vomiting in pregnancy who had been previously treated by several physicians without relief.

I administered a rectal injection of chloral hydrate with the object of securing the much-needed sleep, which she had been unable to obtain for several nights.

I was very agreeably surprised, not only that I succeeded in my object, but that the vomiting immediately ceased, and did not return during that pregnancy. The patient rapidly recovered from her disagreeable condition, and was able to take a generous diet without the least discomfort.

Since this time I have invariably prescribed chloral hy-

drate injections for vomiting in pregnancy, always with the desired results.

Recently, in the treatment of a young woman married but a few months, I ordered this treatment, but she refused to disturb her usual rectal toilet, and the remedy was administered *per os*, with the same results as *per rectum*. Yet I prefer the latter method, and believe it is more certain in procuring relief, for very obvious reasons.

I hope that my fellow practitioners who have not used this remedy will submit it to trial, and I am sure their patients affected with vomiting in pregnancy will be better enabled to retain their morning meal.

Why this well-known drug controls this affection I will not say, but am content with the satisfaction of knowing that it will do so.

D. D. MARR, M. D.

SOCIETY REPORTS.

PHILADELPHIA ACADEMY OF SURGERY.

At a stated meeting held November 2, 1885, D. HAYES AGNEW, M. D., President of the Academy, in the chair, a communication entitled

NOTES ON THE NEW ANTISEPTICS, HYDRONAPHTHOL AND THE POTASSIO-MERCURIC IODIDE, WAS READ BY R. J. LEVIS, M. D., one of the Attending Surgeons to the Pennsylvania Hospital.

The following are the claims made for the newly-discovered antiseptic, hydronaphthol:

It is at least twelve times as effective as carbolic acid, and is entitled as a true antiseptic to occupy a position in the comparative tables next to the mercuric bichloride.

It is thirty times as potent as salicylic acid, sixty times as effectual as boric acid, and has six hundred times the antiseptic power of alcohol.

Hydronaphthol is soluble when placed in cold water to the extent of one part in two thousand. It is soluble in hot water in the proportion of one to one hundred; but when the water becomes cooled to ordinary temperatures a precipitate occurs, leaving a solution of one to one thousand. In this strength of one to one thousand it permanently prevents the development of the germs of putrefaction in all putrescible fluids.

Whilst the true antiseptic or *inhibitory* action of hydronaphthol in such cold aqueous saturated solution is perfect, its germicidal and proper disinfectant power is ineffective. For the destruction of already existing germs, such as have a tenacious vitality, as those of anthrax bacilli and pathogenic micrococci, it therefore cannot be relied on. As to its action in this regard, as compared with carbolic acid, it should be remembered that a ten-per-centum carbolic solution is required,—a strength practically improper in wound-treatment. In ordinary antiseptic practice, carbolic acid is valuable only on account of its inhibitory action.

The first use of hydronaphthol as an antiseptic was by Dr. G. R. Fowler, of Brooklyn, to whom the profession is indebted for its introduction to practical surgery. My own experience with the antiseptic action of hydronaphthol in the wards of the Pennsylvania Hospital and in private surgical practice confirms his observations, as given in his recent articles in the *New York Medical Journal.*

Hydronaphthol is a grayish substance, in the form of

crystalline lamina, having a slightly aromatic taste and odor. It is soluble freely in alcohol, ether, chloroform, glycerin, benzole, and the fixed oils.

In the aqueous saturated solution of one to a thousand it is absolutely unirritating, and has no toxic action, either local or systemic; is free from unpleasant odor, and has no injurious action on metallic instruments or on clothing fabrics.

Besides its use in aqueous solution, I have used it in the form of a powder diluted, preferably with the oxide of zinc in the proportion of one to fifty.

I believe that hydronaphthol may well displace carbolic acid from practical surgery.

The potassio-mercuric iodide is four or five times as powerful as a true germicide or disinfectant as the mercuric bichloride. For such use it is effective in aqueous solutions in the proportions of only one to twelve thousand.

The potassio-mercuric iodide is made by simply dissolving equal quantities of the biniodide of mercury and the iodide of potassium in distilled water. The solution is evaporated, and there remain yellow, needle-like crystals of the potassio-mercuric iodide.

In the use of such dilutions of this powerful antiseptic, local irritation is entirely avoided, and the risk of producing the constitutional effects of mercury is greatly diminished.

The introduction into surgical treatment of these two remarkable and powerful substances, hydronaphthol and the potassio-mercuric iodide, will do much to overcome some of the objections and inconveniences of antiseptic practice.

DISCUSSION.

Dr. S. W. Gross: Dr. Levis has made the statement that the potassio-mercuric chloride is a far safer germicide than the ordinary mercuric chloride. The solution of one to twelve

thousand is really not so much weaker, if we look at it properly. The potassio-mercuric chloride is dependent for its activity on the biniodide of mercury. It is a well-established fact that the biniodide of mercury is a far more powerful germicide than is the bichloride. Because we use a weaker solution is no evidence that it is not as strong as the bichloride. I can see no advantage in making the potassio-mercuric chloride solution, unless it is to fix the biniodide. In preparing the solution of corrosive sublimate in which we wish to keep gauze, sponges, etc., for a long time, we add to it seven and one-half grains of chemically pure chloride of sodium, with the view of fixing the bichloride so that it will not be converted into calomel. The addition of an equal part of iodide of potassium to the biniodide will fix that salt so that it will not be decomposed. There is therefore really no advantage in it, except to prevent changes in the biniodide.

Hence this is not a new remedy, for the biniodide has been used as a germicide. I do not see the advantage of using a stronger substance in what is apparently a weaker solution. It is of course impossible to say anything as regards the constitutional effects, for Dr. Levis has not had sufficient experience to determine whether or not toxic symptoms are produced by this agent. There is no reason why,—if the potassio-mercuric chloride is used as carelessly as the corrosive sublimate often is,—there should not be toxic symptoms produced. If the cases of poisoning with the bichloride of mercury which have been reported are examined, it will be found that the bichloride has been used in unusually large quantities. For example, a one to one thousand or one to two thousand solution has constantly been used as a fluid to irrigate the wound during a surgical

operation. Again, in psoas and iliac abscess, where a large quantity of the solution has been introduced after the evacuation of the pus, toxic symptoms have arisen. If a little care is exercised, there is no reason why toxic symptoms should arise from any of the mercurial solutions.

In regard to hydronaphthol, I know nothing of it from experience. I, however, know that Dr. Fowler has been making experiments with it for years, and, even after the adoption of mercurial solutions, used saturated compress with naphthaline outside of the corrosive-sublimate dressings to keep the wound enveloped in the vapor of naphthol, according to his statement.

Dr. R. J. Levis: Dr. Gross will bear in mind that with the potassio-mercuric chloride there is only one-fifth the amount of mercury used. We know that the mercuric bichloride is an unstable salt in the way in which it is generally used, and for ordinary uses it can hardly be made a stable salt.

Dr. S. W. Gross: It is a stable salt. A solution of corrosive sublimate in water can be kept for a week without any change. To make a stable solution for sponges and dressings, it is better to add chloride of sodium.

Dr. R. J. Levis: I used the term unstable with reference to the mercuric chloride in contact with organic matters. Under such circumstances it is liable to be converted into ordinary calomel.

Dr. S. W. Gross: This is a mistake. Corrosive sublimate does not become unstable in the presence of organic compounds. This has been asserted, but there is no proof of it. If it did undergo this change, why do we have toxic

symptoms arising when large quantities of the solution are injected into abscess-cavities?

Dr. J. M. Barton: As regards stability, the mercuric chloride does not seem to undergo any chemical change. At the same time, it undergoes some change when brought in contact with organic matter. If this were not so a large mass of odorous material could be disinfected with half a grain of corrosive sublimate.

Dr. Charles W. Dulles: It is well known that the salts of mercury in the presence of albumen are apt to be converted into albuminoids, but this does not prevent the constitutional effect of mercury. I believe that this change is not in sufficient quantity to interfere with the antiseptic properties of the substance. The effect of the potassic mercuric chloride in the presence of albumen is somewhat similar. Dr. Oliver, who has made some extensive experiments in regard to albumen in the urine, has found that this potassio-mercuric chloride is the most delicate test for albumen.

Dr. S. W. Gross: In corroboration of what Dr. Dulles has said, I would recall the fact that when Lister began the use of corrosive sublimate he employed a solution which was too strong, and found that a certain amount of erythema and vesication was produced. He now procures the serum of the blood of a horse and makes his solution in that way.

Dr. Addinell Hewson: I have had some experience with hydronaphtol, but I have seen it produce irritation, and even such erythema as was alarming. This was a solution of one to two thousand. The effects were produced within twenty-four hours. The patient experienced constant distress from the time of its application.

Dr. R. J. Levis: I have found the one to two thousand solution almost tasteless. I have placed it in one eye without being conscious of its presence.

Dr. Addinell Hewson: In this case there was a tendency to erythema, and the result undoubtedly proved that the remedy had no effect as a germicide.

Dr. Levis: That is not claimed for it.

Dr. F. H. Gross read a paper on *A Suture for the Approximation of Deep Wounds.*

Dr. R. J. Levis: I wish to call attention to a suture to be used in place of the buried suture. Every surgeon recognizes the advantages of approximating the surfaces of wounds as conducing to healing. We have all been too much satisfied with approximating simply the edges of wounds without paying any attention to the approximation of the deeper parts. In amputations and in the removal of tumors from such situations as the groin and axilla, large spaces are left which may become filled with blood, serum, or the products of inflammation. Since the introduction of antiseptic surgery, and particularly since the use of animal sutures has been adopted, some surgeons have used what are called buried sutures. These have their disadvantages, and sometimes it is quite difficult to apply these sutures so as to secure complete approximation.

Some time ago I devised a simple plan of approximating the deeper parts of a wound. Taking an amputation-wound for illustration, to approximate the flaps in this manner I take an ordinary silver wire armed at each end with a straight needle, introduce one of the needles into one flap at the bottom of the wound and bring it out about half-way between the angle of the wound and the edge of the flap.

It is then carried across the wound and through the opposite flap. The second needle is then carried through in the same manner. A figure of 8 is thus formed. When the ends of the wire are drawn upon, the deeper portion of the wound is approximated. The superficial portions of the wire are then carried across the surface and bring together the edges. Superficial sutures are also introduced. I have used this in a number of amputations, and think it particularly applicable to the closure of wounds after the removal of large tumors of the breasts where the axillary glands are also removed. In a case in which I removed the breasts four days ago there is now complete union. I insert as many of these sutures as may be necessary. I have always used wire, but ligature rendered antiseptic would probably be almost as good.

Dr. J. Ewing Mears: In deep wounds of the axilla, what tissues do you approximate?

Dr. Levis: Fatty tissue, muscular tissue, or whatever may be necessary.

Dr. Addinell Hewson: I have used the suture of Dr. Levis frequently, but I have used it without the addition of superficial sutures. I employ, instead, collodion and gauze. This I find more satisfactory. I have had direct union through a stump without suppuration whatever on more occasions than one.

Dr. S. W. Gross: I have seen Dr. Levis apply this suture, and it does approximate wounds in a most excellent manner. It is very easy to get the suture out. It is very desirable to get rid of the presence of any foreign body in the wound. Neuber, the introducer of the decalcified-bone tubes, recognized their inconvenience, as well as the disad-

vantages of the ordinary rubber drainage-tube. It was he who proposed buried sutures. He also resorted to other means of drainage. In amputation of the breast he occasionally punched holes in the skin to allow free drainage. In removal of axillary tumors he inverted the skin on each side, attaching the anterior portion to the pectoralis major and the posterior to the latissimus dorsi, thus making a funnel-shaped opening through which drainage could be effected.

Dr. T. G. Morton: During last winter, something similar to this was proposed by Dr. Packard at the Pennsylvania Hospital. He suggested the introduction of a long pin across the stump, and then the application of a figure of 8 around, making careful compression. This would answer very much the same purpose.

Dr. R. J. Levis: This suture might be called the duplex suture or the deep-crossed suture. I think it would be very suitable in the high operation for stone, the deep portion of the suture including the bladder and the superficial portion including the superficial tissues.

PIN FOR TREATMENT OF FRACTURE OF THE PATELLA.

Dr. Morton: I wish to exhibit a pin which I have used in the treatment of fractured patella. For a number of years I have been using the ordinary Malgaine's hooks and the modified Malgaine's hooks. It occurred to me that if I could pass a steel pin and keep the fragments approximated I should have an easier method than with the hooks. I devised this pin, which has a detachable handle and works as an ordinary Brainard's drill. In the case in which I applied it the pin went through without difficulty. Over the extremities shoulders were applied. The fragments were then

not disturbed for three weeks. There was not the slightest irritation. Lead-water and laudanum were kept applied. When the pin was removed, I found under one of the shoulders a small collection of pus. In order to obviate this I have had a shoulder made which does not come in contact with the skin at a right angle. To avoid the possibility of pulling any pus into the bone when removing the pin I have made it in two pieces, united in the middle with a screw. When it is desired to remove the pin, the parts are unscrewed and the two pieces removed. I have had less trouble with this than with any other method of treating fractured patella.

In introducing the pin I did not employ any anæsthetic, and the patient made no complaint. The whole manipulation did not occupy over fifteen seconds. It is impossible to apply Malgaine's hooks without an anæsthetic. I was surprised at the ease with which the pin passed through the bone. It met with no more resistance that it would in going through a hard Boston cracker.

I was unable to apply the pin until thirteen days after the fracture, on account of the effusion within the joint. I have never put on the hooks until all local irritation has subsided.

In this case I do not think that there is bony union. I have never seen bony union where there has necessarily been delay, but there is here exceedingly close union.

Dr. Wm. W. Keen reported a case of *Obstructive Jaundice, Cholecystotomy for Impacted Gall-Stones.*

Albert Henry K., German, aged 45, residing in Philadelphia, was admitted into the hospital September 21, 1885, during the service of Dr. W. W. Keen. Parents healthy.

He is the only living one of twelve children; the rest died during infancy.

General health was good, with occasional attacks of gastro-intestinal catarrh. Four years ago he had a severe attack of colic, the pain arising in the right hypochondriac region and extending to the umbilicus. The attack lasted several hours, and was relieved by medicine. The following year he had a similar seizure, followed by a chill, loss of appetite, vomiting, and constipation, and in a short time the conjunctiva was jaundiced.

He had another attack June 12, 1884, followed by nausea, vomiting, chill, loss of appetite, constipation, high-colored urine and clay-colored stools, with marked jaundice of his whole body, which continued ever since. Since that time the attacks have become more frequent, occurring once or even twice weekly.

He had been, since January 1, 1885, under medical care, but with no improvement. He first came to the dispensary August 6, and was under observation and treatment, but without any change for the better.

Upon admission, it was noted that he had lost some flesh; his mind was dull; the skin, conjunctiva, and mucous membrane were intensely jaundiced; marks of scratching appeared on the abdomen, and he suffered much from itching and stinging at night; the pulse was 54 and full; tongue slightly coated with yellow fur in the morning. His appetite was poor, bowels costive, and the stools were of a clay color. He also complained of flatulence and constant tenderness and distress in the epigastrium. The urine was high-colored, acid, sp. gr. 1025; no albumen was detected, and no sugar; bile-pigment was present.

Physical examination showed a tumor below the margin of the ribs in the right hypochondriac region; it extended from the right nipple-line three and a half inches to the median line, and to within two and a quarter inches of the umbilicus. It was not absolutely flat upon percussion, but tender and elastic. The liver-dullness extended from the sixth interspace in the nipple-line to one-fourth inch below the margin of ribs. The abdomen was not distended; spleen of normal size; lungs and heart both normal.

September 24. Had severe headache; pain in the epigastrium, followed by a rigor lasting three hours, then fever. 5 P. M. Temp. 101.5°; pulse 80; podophyllin (gr. ½ at night) acted freely on the bowels.

September 28. Dr. Keen introduced into the tumor a hypodermic needle, and thought he detected a stone. A very small quantity of liquid was withdrawn; it was dark-colored and mostly blood.

October 1. An aspiratory needle was introduced into the tumor three inches, and a probe passed through it. A stone was detected.

October 4. He had a chill, which lasted three hours, followed by the usual symptoms. The operation which was appointed for the next day was, therefore, postponed.

October 10. Dr. Keen, assisted by Drs. Grove, Mears, O'Hara, Willetts, Elmer, Learned, Boyd and others, operated, with the usual antiseptic precautions, including the spray, carbolic acid being used.

The surface of the body was first washed off with carbolized water; etherization was commenced at 1.30 P. M. An incision of three inches was made parallel with the margin of the ribs, commencing one and a half inches below the ensiform cartilage, and extending over the prominence of the tumor. All the

vessels were tied with catgut ligature. The abdominal walls were thick. All hæmorrhage had ceased before the peritoneum was opened. Now the liver came into view, and what was thought to be the tumor—the distended gall-bladder—proved to be an enlarged left lobe of the liver, presenting much more to the right than usual. The gall-bladder could neither be seen nor felt.

In order to obtain more room, the incision was prolonged about two inches to the right. The colon and omentum were now exposed. Still the gall-bladder could not be detected with certainty; but a hard mass could be obscurely felt, which was believed to be gall-stones. It lay transversely, directly in front and slightly to the right of the spine, and almost absolutely in contact with it. To obtain still more room to work at such a depth, another incision was made, beginning at the upper end of the first incision, and extending downwards in the linea alba three inches. The closest search was made for the gall-bladder, being still in doubt as to its situation.

From the posterior part of the transverse fissure, almost in contact with the spine, an apparently uniform mass, continuous with the gastro-hepatic omentum, extended downwards and forwards, in the posterior part of which, as stated, the gall-stones could be somewhat obscurely felt near the liver; and, farther away from it, a softer mass, which ought to be the flaccid gall-bladder. These lay in such relation to each other that the gall-stones were thought to be in the cystic and the common duct.

Into this softer mass—the supposed gall-bladder—a small opening was made; but it was soon evident that this was the duodenum, as the finger detected the pylorus. Discovering this, the wound in the duodenum was closed with five interrupted and five carbolized-silk Lembert's sutures. The harder

mass containing the gall-stones was now carefully lifted to a slight extent by the finger and thumb, and the wall and tissues in front of it cautiously incised for about three-fourths of an inch, and two stones, respectively three-fourths and one and one-fourth inches in size, removed. The gall-bladder was as firmly contracted around them as a kid-glove clasps the finger, and contained absolutely no fluid. The opening of the cystic duct could be felt by the finger, and was patulous. No other stones could be felt. A probe, it was thought, could be passed from the cyst to the common duct.

The wound in the gall-bladder was stitched with four interrupted and four Lembert's carbolized-silk sutures. All hæmorrhage had apparently ceased. The cavity was carefully cleansed, and the abdominal walls, including the peritoneum, were sutured with wire, and the wound dressed with bichloride-of-mercury gauze. The operation lasted until 4.45 P. M. His pulse during the operation was never more than 75, nor under 60, and his skin was fairly warm; but his respiration, from early in the operation, was sighing.

After the operation, he suffered from moderate shock. Hot bottles were applied along his extremities.

5 P. M. Temperature, 99.5°; pulse, 88. He suffered very much pain and complained of thirst. Morphine, gr. $\frac{1}{6}$, and cracked ice.

5.30 P. M. Hiccough; relieved by atropia, gr. $\frac{1}{120}$.

7 P. M. Pulse 96, and compressible; temp., $99\frac{4}{5}°$. Morphine, gr. $\frac{1}{6}$. Small quantities of brandy and water were given at intervals.

9 P. M. Feeling quieter. Still complains of pain.

11 P. M. Pulse, 104; respiration, 24; morphine, gr. $\frac{1}{6}$, was given at intervals; through the night he gradually failed.

October 11. At 7 A. M., pulse very feeble and rapid; temp.

101⅘°. Digitalis and brandy were given; but he did not rally, and died at 8 A. M.

The post-mortem examination was made at 12 M. Rigor mortis well marked, though the trunk was still warm. All the abdominal contents were deeply jaundiced. About six to eight ounces of blood were found in the belly, and, as the greater part of it was behind the peritoneum and extended to and around the right kidney, it presumably came from vessels injured in the lifting of the mass in which the gall-stones were situated. This had been carefully done by Dr. Grove, as it was impossible to obtain access to it otherwise at such depth, but required some force. No hæmorrhage had been observed at or immediately after the operation. There had been no bleeding from the operation-wounds, either in the shrunken gall-bladder, the walls of which were very thin, or from those in the duodenum or the abdominal walls. There was no hæmorrhagic tendency noticed, as is so often the case in such operations. There also had been no escape of bile or intestinal contents into the peritoneal cavity. No organs were observed except those concerned in the operation.

The liver, gall-bladder, stomach, duodenum, pancreas, and colon were removed in mass, and showed the following facts:

The left lobe of the liver, especially its anterior portion, was much enlarged and somewhat twisted to the right, so that its semi-lunar projection occupied the position of the gall-bladder, and was easily mistaken for it before the operation. The liver was deeply fissured between the right as well as the left lobe and the lobus quadratus. No gall-bladder existed in the proper site for it, but it was found lying transversely in a shrunken condition, as stated, far posteriorly. The common and cystic ducts were patulous. The wounds in the gall-bladder and the duodenum were effectively closed by the sutures, and no

escape of the contents had taken place. No other gall-stones were found. The mucous membrane of the duodenum was deeply congested for a wide extent, undoubtedly from inflammation existing before the operation. The duct of the pancreas was pervious.

So far as I am aware, such complications as this displacement of the gall-bladder, its shrunken condition, and the impossibility of deciding what was and what was not gall-bladder have not before been reported. It may be said that the incision should have been first made at the place where the stones were felt; but it was decided not to do so on account of the obscurity with which they could be felt lying under considerable tissue, which might, in the displaced position of the gall-bladder, be a part of the intestines or contain large vessels, and at the depth at which they were situated it would have been exceedingly difficult, if not impossible, to control the hæmorrhage or repair the damage to the intestinal wall, should it have have proved to be intestine. Indeed, I debated seriously even abandoning the attempt to remove the stones at one time, on account of the difficulty of reaching them; and, on reviewing the case, I am inclined to believe that it would have been better to close up the abdominal wound, and trust to the possibility of the stones ulcerating into the duodenum, to which the gall-bladder was already closely matted.

The fatal issue in the man's debilitated condition was due to the shock of a prolonged operation and the moderate after-hæmorrhage.

One other point demands notice. It is very evident that the hypodermic needle-point did not touch the stones, and it is somewhat doubtful to me whether the probe passed through; the aspirator-needle did, judging from the depth at which they were found. But the sensation of scratching such a stone was

so deceptive that all three of the resident-physicians, as well as myself were under the impression that the probe certainly did so, and we were fairly certain that the hypodermic needle also did.

DISCUSSION.

Dr. William Hunt: What has been the success following this operation?

Dr. Keen: I have not had time to gather the cases together; but when I prepared my paper last year there were thirty-eight cases, with eight deaths.

Dr. S. W. Gross: The percentage of deaths after cholecystotomy is eighteen. The percentage of deaths is far greater than after removal of the gall-bladder, or cholecystectotomy.

Dr. J. Ewing Mears: This case serves to confirm what every one who has had anything to do with abdominal surgery believes: that it is frequently impossible to tell what will be found in the abdomen before it is opened. This case was carefully examined before operation, and what was supposed to be the gall-bladder was outlined; but, when the abdomen was opened, this proved to be the left lobe of the liver. This may be regarded as one of the most obscure cases of cholecystotomy that has yet been performed. In the reported cases there has been no difficulty in locating the position of the gall-bladder.

Dr. W. W. Keen: In the three prior operations which I had done, there was no difficulty in finding the gall-bladder.

DEFORMITY OF THE UPPER EXTREMITIES.

Dr. W. W. Keen: I have here a patient with a deformity of the upper extremities, which I suppose is due to rickets. Precisely similar conditions I have never before seen. This girl is in her fifteenth year, a mulatto, tall and rather slender for her years. One year ago she began menstruating, and at

the same time noticed the commencement of the changes which are now most distinct in the right wrist. There is also marked angular deformity at the elbow. Feeling the olecranon process, there is found considerable relaxation of the ligaments, allowing the ulna to be moved in different directions. In the wrist there is apparently no mechanism which would account for the deformity present. The deformity of the left wrist can, with the exercise of considerable force, be reduced. I would call attention to the ease with which the deformity of the elbow would be overlooked. When the hands are pronated it is not seen; but it is only observed in supination. The other bones of the body are free from evidences of rachitis. There is no trouble about the head, no beading of the ribs or enlargement at the ankles. There is no evidence of inherited specific disease: the father died of consumption, the mother is living and perfectly healthy. There is no evidence of specific disease in the condition of the teeth.

Dr. Charles W. Dulles: Would not this be more properly called a case of osteo-malacia? Rickets is an affection of the bones in the progress of their growth. Osteo-malacia is the term applied to the condition in which bones, having attained their proper development, undergo softening.

Dr. Keen: The bones are not curved to any extent, and in no other bone is there a tendency to softening.

Dr. R. J. Levis: My opinion is that the case is really a neurosis. I look on it as a paralytic condition rather than a true bone-affection. It is analogous to some forms of club-foot, and particularly to knock-knee and the like, which, we know, occur from irregular muscular action.

Dr. W. W. Keen: I cannot understand how this condition could be due to muscular action, either paralysis or contracture. There is no evidence of such a condition. No muscle

is tight, and no muscle springs into relief at any point. The muscles seem to act properly, and the trouble appears to be in the bony system. In consequence of the change in obliquity, the muscles which go across as chords of the arc tend to increase the deformity.

My attention has been drawn to the diminished size of the head of the radius. This might have something to do with the deformity at the elbow, but it could have nothing to do with the condition of the wrist.

Dr. William Pancoast: I noticed that, on pressing the radius firmly against the ulna, a grating could be produced. This was only elicited on firm pressure.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 18th, 1886.—THE PRESIDENT, PRO TEM., D. W. GRAHAM, M. D., in the chair.

DR. E. J. DOERING read a paper entitled "MUTUAL PROTECTION AGAINST BLACKMAIL." The author stated that among the many trials which physicians have to encounter in the practice of their profession is the ever-existing liability of being blackmailed. This may either assume the more frequent form of a so-called malpractice suit, or the relatively less frequent charge of a criminal assault, according to the viciousness of the complainant. Such suits against physicians are increasing. One reason quoted was the fact that every city is overrun with petty lawyers, who have little or nothing to do, and are always willing to encourage any suit whatever, if there be the least prospect of getting something out of the defendant. The author stated that since investigating the matter he became con-

vinced that many of these blackmail schemes were settled before being made public. Many a physician preferred being robbed of one or two hundred dollars, rather than incur the publicity, the loss of time, and the endless expense of a lawsuit. Again, the average jury, composed of the ignorant and illiterate, will always have a strong leaning toward the complainant, and against the defendant, in a malpractice suit, as physicians are popularly supposed to be capitalists. The author stated that personally he had never been sued or even threatened with a suit, and it was therefore from no motive of selfish interest, but from a sincere regard for the welfare of the profession, that he advocated the formation of an association for the mutual protection of physicians against blackmailing suits of all kinds. His plan is to organize a society composed of two or three hundred members of the regular profession, all of whom shall be of acknowledged ability, possessing a good moral character and standing in the community. Said association to employ the best legal talent attainable, by the year, to furnish the members such legal advice as they may desire at any time, and defend any suit against the members arising in the discharge of their professional duties. It was stated that the expense to each member of an association composed of about two hundred would not exceed five dollars per annum, and that the initiation fee of five dollars would create a sufficient fund for court expenses. Such an association would be a power in preventing suits. Let it be known that the individual physician is backed by the financial and moral support of a few hundred of the best physicians, and aided by the best legal talent obtainable, and he will be let alone by the offscourings and dregs of society who constitute, al-

most without exception, the blackmailing element in our professional life. The author stated that he was not aware of the existence of such an association as the one proposed, in any city, but the principle, at least, had been carried out recently by the New York Medical Society, in voting $500 to assist in the defense of the Drs. Purdy, members of the society, in the case of Brown *vs.* Purdy. After reading a number of letters from prominent physicians in favor of forming a protective association, and presenting several legal opinions sustaining the advisability, practicability and legal status of such a society, the author concluded by stating his firm belief that such an association for mutual protection is needed; that it would be a power for good; that it would draw the profession closer together; that, in short, it would be based on the principles of a common brotherhood, viz.: equality, harmony, justice and unity.

DR. F. C. HOTZ said that the extract of his letter to Dr. Doering, which was incorporated in the paper, indicated that at the time it was written he did not think favorably of the project. And, after listening with much interest to the doctor's arguments, he saw no reason for changing his opinion. Professional reputation and honor is the most personal of all personal property; if he lost it, it does not hurt anybody but himself, and therefore if any attack be made on it he should certainly wish to employ among the able lawyers the one in whose ability he had the greatest confidence. But he was not sure whether the lawyer retained by this protective union would be the one to whom he should like to trust the defense of his reputation. The attorney might be as able, or abler, than the lawyer of his own choice; but should the case go against him, he should never feel satisfied that the lawyer had done all that could be done for him unless he had full confi-

dence in him. It is with the lawyer as with the physician, a question of confidence, and his patrons find no fault with his treatment as long as they have implicit faith in his ability.

An objection of greater weight, however, has been urged by several of the doctor's correspondents in asking what possible effect it might have if the fact was brought out in court that the defendant belonged to such a union. The lawyers whose opinions were obtained and read by the doctor say it cannot legally affect the case. There is no doubt but that this is true. But the verdict of a jury in malpractice suits is not determined by the legal aspect of the case; and circumstances which cannot have any legal effect upon the case have often made a deep impression upon a jury and decided the case against the physician. To illustrate: In Dr. Bettman's first trial the experts of the prosecution testified so unreservedly in the doctor's favor that had the case been then submitted to the jury without arguments, the doctor would have been acquitted at once. To fortify his cause Dr. Bettman's lawyer called a number of experts whose testimony was of course only cumulative. Now, what did the prosecuting lawyer do? Did he make an effort to break down the expert evidence by scientific arguments? No, sir; but he wiped out its effect upon the jury by the mere waving of his hand, speaking thus: "The defense has piled up a mountain of expert evidence. But, gentlemen of the jury, what does it all amount to? These doctors are working together in the same hospital. Don't you see that they have a common interest to sustain each other, because every one of them may be in the same fix some day? Don't you know they are clannish? They won't admit that one of them can make a mistake. O, no!" One could fairly see the impression this harangue made upon the jury, and they rendered a verdict against the doctor, though it is certain the lawyers will

say the fact of his being associated with the experts in the same hospital should and could legally not prejudice the jury. But it evidently did, all the same. And after such experience, can you for one moment believe it would not damage the physician's cause if it was shown he and his experts belonged to a society formed for the express purpose of mutual assistance in malpractice suits. A mighty poor lawyer indeed he would be who could not make a great deal out of it before a jury.

Very interesting was that part of the paper in which the doctor evolved his idea how this new society could prevent, ward off, malpractice suits. He believes the shysters would not be so eager to engage in this business if they knew they had to fight a corporation with plenty of means to employ the best legal talent. Why this should discourage those fellows, it is hard to understand. They do not sue poverty-stricken doctors. Whom they select for their victims they suppose to be rich and consequently able to employ a good lawyer. They do not expect to have an easy game; but why should they not try it? They don't risk anything by it. The blackmailer's stake is only two dollars and a half for filing his application, and his lawyer's stake is his time, which is not worth much anyhow. So, you see, they have nothing to lose, but much to gain. What difference should it make to them whether the opposing counsel is engaged by one physician or one hundred? If you wish to devise means by which this blackmailing nuisance can be stopped, or at least reduced to a minimum, you must try to get at the roots of the evil; that is, you must find the causes which usually bring it forth. And you will not go far to find them; for you find them right at your door, in our own profession, in the shape of *indiscriminate dispensation of gratuitous services and of unkind remarks*

of one physician about another. Physicians are altogether too quick to give their services gratis to almost anybody at any time. But you know very well people do not value very much what they can get for the mere asking; they do not think much of what they get for nothing. And it is also a widespread notion (especially among the lower, uneducated people) that the quality of service is regulated by the amount of money they pay for it; that the treatment at a free Dispensary, because gratuitous, is not the same, not as good as at the physician's office where they have to pay for it. These people cannot persuade themselves that a physician will take the same interest in a case whether or not he is paid for his services. The poor, therefore, are always suspicious that they do not get their full share of attention; they are quickly ready to charge their physician with carelessness if the case goes wrong. And with a patient in this frame of mind it takes but very little encouragement to begin a suit for damages. And in nine out of ten cases, doubtless, this encouragement is furnished by the members of our own profession. He did not mean to charge physicians with purposely, wilfully instigating a lawsuit against a professional brother. Though this has been done, such extraordinary baseness is a rare exception.

What DR. HOTZ had reference to is the inconsiderate, careless, thoughtless habit of expressing an opinion about a case, or a colleague. To illustrate: A physician at a dispensary shows a bad case to professional friends, and, without thinking of the possible evil consequences, makes in the presence of the patient some remark like this: "Well, perhaps I ought to have done this or that." The patient, already laboring under the impression that he was not fairly treated because he could not pay, sees in the doctor's remark

the strongest confirmation of his suspicion, goes to a shyster and begins a suit for damages. And, doubtless, in a similar way the mind of a patient is often poisoned and set against his physician by a careless or unkind remark of another physician. So many physicians are always ready to express their opinion about their colleagues in the presence of anybody, or to criticize their professional acts upon the information received from a patient or some old woman. Now you all know how these people misconstrue the words of a doctor; how they pervert the facts inadvertently. You must admit you cannot rely on what patients tell you, and you cannot form an opinion that is worth anything of a case you have not seen or been informed about by the attending physician. Why, then, don't you say so when some busybody asks you what you think about that case of Dr. H.? Or if you know the physician, say he is competent to attend to his own business; if you don't know him, change the subject. But at all events, unless he be a notorious quack, refrain from uttering any words which even only insinuate the possibility of a mistake or want of skill of your colleague.

Stop running each other down; stand by each other; sustain each other, "stick together and be clannish;" let it be understood in public that no reputable physician will prostitute himself by going to court as expert for a blackmailer. If all the reputable physicians of this city adopt and act on this principle, blackmailing the medical profession would soon be a thing of the past, and malpractice suits more effectually prevented than by the organization of a protective union.

PROFESSOR P. S. HAYES said that from his costly experience in a malpractice suit he felt that an association such as sug-

gested by DR. DOERING would be of great service. The lawyer employed by such an association would speedily acquire such a fund of medical knowledge that he would be considered an expert in malpractice cases. He would not require an amount of coaching necessary to prepare for any given case, as would be requisite in the case of a lawyer who had had no experience in such cases. His opportunity for obtaining information in a given case would be largely extended, for each member of the association to whom he might apply would be interested in giving him the desired knowledge. He would soon become acquainted with medical witnesses and know which would give the best testimony in any case.

An association of the character suggested by the paper might be a means of educating its members in regard to laws bearing on the rights of physicians and their patients, now not generally understood.

For one he is heartily in favor of such an association, and should give it his hearty support.

PROFESSOR G. C. PAOLI said DR. DOERING'S paper is not only a valuable one, but contains such a high, noble, charitable feeling, that the Society ought to be grateful to him. He wondered that such steps had not been taken before, because so many of our professional brethren have not only suffered annoyance, but pecuniary loss as well. How can we expect from an ignorant jury a decision based on scientific knowledge and justice?

DR. F. M. WELLER said that the subject of the paper was worthy of consideration; that the discusion of the formation of an association with an object so widely different from the Medical Society seemed out of place; the one essentially

scientific, the other in the nature of an insurance. The right to form such an organization was unquestioned; the policy should be considered by each individual. That while any one might be made the object of blackmail, he believed that charges of malpractice more frequently arose from the ignorance of physicians of the statutes affecting the practice of medicine, especially those of the criminal code, and of the rulings of the courts in cases.

DR. H. D. VALIN read a paper on

THE ORIGIN AND SIGNIFICANCE OF THE SEXES AND THE DETERMINATION OF SEX IN UTERO.

He said that it is not generally known that intermediate steps exist by which sexual generation evolved from a primitive mode of conjugation of two or more similar organisms. The process of conjugation observed in the slime molds resembles a sexual process of extreme simplicity. But this union seems to take place between undifferentiated individuals, and as no sexual organ or secretion is present, it could not be called sexual, and it is only a step higher than that observed by Ch. Robin in the noctiluca, individuals of which sometimes swallow others of their own species as they would a particle of food.

The evolution of the sexes is epitomized in the three following species of the volvox family: *Pandorina morum*, *Volvox globator*, and *Volvox aurens*. In the first the spermatozoids are not differentiated from the granules of the ovum, in the second they are so differentiated, and in the third the two sexes exist each in a different colony.

In the animal kingdom, some species of mollusks contain an organ (ovo-testis) from which spermatozoids as well as ova are produced. In many animal species both sexes are contained

in one individual, as in the case of tape-worm, leeches, earth-worms, barnacles, oysters, some star-fishes; and among the vertebrates such is the case in several species of serranus, as well as in other fishes. However, most of the vertebrated animals have the sexual organs distinct in two different individuals, but a condition closely resembling hermaphroditism often occurs by reversion as an anomaly; and should any one disbelieve that some remote progenitor of the whole vertebrate kingdom has been hermaphrodite, there remain the facts "that at a very early embryonic period both sexes possess true male and female glands" (Darwin), and in each mature individual rudiments of some of the sexual organs of the opposite sex are extant.

The condition of hermaphrodite is advantageous enough as long as the struggle for existence is but slightly marked, but in higher life, where the least advantage is of moment hermaphroditism gives rise to separate sexes in the following manner: those hermaphrodites whose spermatozoids and ova mingle with the generative products of other hermaphrodites breed a progeny which is more vigorous than that resulting from a single hermaphrodite, and thus copulation between hermaphrodites became established in the struggle for existence; but this is an observed fact, for Darwin said: "There is reason to believe that with all hermaphrodites two individuals, either occasionally or habitually, concur for the reproduction of their kind."

Of course that set of organs in one individual hermaphrodite which had been used more frequently would the better perform their function, while the opposite set would become less active; and then we would find some hermaphrodites with better developed male organs; and others with better developed female organs; and the progeny resulting from the union of two

such more differentiated individuals would be especially favored in their struggle for life and would breed individuals in which one set of organs would be abortive, while the other would be highly developed, as is the case in as high an animal as man. Such a transitory stage as alluded to above is met in mollusks, and in the common oyster; the genital cœca in any given individual are found to be either almost all ovigerous or almost all spermigerous (Huxley).

In the case of hermaphroditic human persons the organs of one sex almost always predominate over those of the other.

The foregoing facts and inferences warrant me in formulating the following hypothesis, which will explain the law of heredity: In hermaphrodites, while the organs of one sex become more highly evolved, at the expense, as it were, of the opposite sex's organs, this latter set, as embryology proves, is slow to disappear, and concentrates itself in the germinal matter. In other words, as the male organs become better developed, the spermatozoids acquire a faculty for developing a female offspring, and vice versa. This hypothesis is based chiefly on the facts that the queen bee (Huxley) contains a male germ in each of her unimpregnated ova, while the male bee transforms, by means of his spermatozoids, the same ova into females.

Determination of Sex in Utero.—In case each sex generally reproduces the opposite, as I claim, it is easy to understand why the number of each remains about stationary under ordinary circumstances. The law of Thury, of Switzerland, that "conception following menstruation produces females, and conception preceding menstruation produces males, harmonizes with my hypothesis if we consider that a greater number of spermatozoids and more active ova will reach the ovum in the uterus than would in the Fallopian tubes and in the ovaries, and should any given cause act to reduce one sex, the

other sex would thrive the better and would reproduce a majority of the rarer sex, thus restoring the equilibrium, and insuring an equal number of either sex in the progeny.

There being no discussion on this paper, the society then adjourned.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

LXII Meeting, Friday, January 15th, 1886.

I.—EARLE. *The Watery Discharges of Pregnant Women.*

II.—DOERING. *Report of a Case of Hydatiform Pregnancy.*

III.—WAXHAM. *Intubation of the Larynx, with History of Cases.* (*Inaugural Thesis.*)

The PRESIDENT, PROFESSOR DANIEL T. NELSON, M. D., in the chair.

I.—PROFESSOR CHARLES WARRINGTON EARLE read a paper entitled,

"THE WATERY DISCHARGES OF PREGNANT WOMEN."

Mrs. F. K. consulted me for a profuse watery discharge which had taken place several times during her pregnancy, commencing at the third month. She was the mother of three children, and had always been free from any marked pelvic disease. The first discharge was clear and watery, and she estimates the quantity at about two quarts. This came away in a gush, most of it being discharged at once, although there was a slight loss for some days thereafter. At first it was thin and clear, then slightly thicker, of the color of weak coffee. These discharges seemed to occur every two or three weeks, and were frequently attended with considerable pain. There was a decided diminution in the size of her abdomen after each discharge.

On October 30th, I found her in great pain, and an examin-

ation demonstrated that the fœtus was very low in the pelvis and apparently not surrounded with any *liquor amnii*. The *os uteri* was neither soft nor dilated. She was ordered anodynes and to remain in bed. On the 7th of November, I again saw her, and found she had been having more or less pains since my previous visit. There was no dilation. Two days after, however, she was delivered, her gestation having lasted about 200 days. The child lived about one hour. She made a good recovery and resumed her place in her family in the course of two weeks.

Mrs. M., 27 years old; in her ninth pregnancy. At the end of five months she commenced to have a flow of fluid which continued until the end of the seventh month, when she gave birth to twins, one living and the other dead. There was no escape of *liquor amnii* at her confinement. The same lady in her eleventh pregnancy commenced to lose fluid at the end of the seventh month, which continued until the completion of the full term, when she gave birth to a healthy child. She had what her attendants called a dry labour.

Mrs. D. W. R., aged 31, the mother of nine children, has been pregnant since the 1st of July, 1885. On November 20th, she said to a friend who was at her bedside that she was flowing and asked to be supplied with a napkin. A sheet folded and placed under the patient was thoroughly saturated with fluid; the discharge being equal probably to at least two pints. She had severe pains, which simulated those of labour, lasting a few hours. On December 15th, she had a similar discharge. The future of this case is yet to be decided.

Frequency.—These cases evidently take place with more frequency than we have, up to this time, supposed; but the older obstetric authors have noticed peculiarities of this kind, and given very fair descriptions of the complication.

SMELLIE says (page 179, Vol. II.): "Dribbling of fluid may go on for weeks, but a sudden gush is invariably followed by parturition; the longest interval between a sudden gush and labour being seven days." In this he is certainly mistaken, as the history of many recorded cases and some of mine will demonstrate.

DENMAN, 1815, says: "Instances have been recorded in which the waters of the ovum are said to have been voided as early as the sixth month of pregnancy without prejudice either to the child or the mother. The truth of these reports seems to be doubtful, because where the membranes are intentionally broken, the action of the uterus never fails to come on. A few cases of this kind, somewhat similar, have occurred to me. A discharge of colorless fluid takes place, daily, from the vagina for several months preceding labour, which is due to the rupture of some lymphatic. Such labours are usually premature and the fœtus small."

The same authority also cites a case where, after the delivery of the placenta, several pints of lymph were discharged.

BURNS, 1822, page 238, says that the discharges of watery fluid from the vagina are not infrequent, and generally depend upon the secretion of glands about the cervix; the rupture of lymphatics, or from fluid collected between the chorion and amnion, or water from blighted ovum in the case of twins.

DR. PENTLAND relates a case where coughing produced a discharge, the water being discharged at the fourth month; but labour only occured at full term.

MERRIMAN, in his work entitled "Difficult Parturition," 1826, relates the case of a lady—six months pregnant—from whom a profuse, watery discharge occurred. She summoned a physician, who assured her that if pains came on she would

soon be delivered, She continued, however, to the end of pregnancy, having a profuse discharge each day. At full term she was delivered, her attending physician rupturing a bag of waters, which appeared in no way different from usual cases. No opening was discoverable in either the placenta or the membranes, and he concluded that the discharge must have come from the outside of the membranes.

CHAILLY, edited by BEDFORD, 1844, gives a rather full account of hydrorrhœa, the description not being different from those I have already related. He says, however, that these discharges are more frequent than are generally supposed, but makes the erroneous statement that in nearly all these cases pregnancy is carried along to its full term.

Nearly all modern authors devote a short section to the consideration of this subject, giving different names, as their ideas of its origin and pathology are different.

Three separate pathological conditions seem to be, in many cases, confounded, and I see no way by which a differentiation can be made.

1st. A discharge of the *liquor amnii*.

2d. Discharges from increased glandular action.

3d. A possible collection of fluid between or outside of the membranes, and its irregular evacuation.

In my teachings I have been in the habit of speaking of hydrorrhœa, but never, up to a few months ago, had I seen a marked case. A study of this case with others collected from my own experience, and the perusal of the article written by DR. THOMAS C. SMITH, of Washington, D. C., which appeared in the *American Journal of Obstetrics* in May, has caused me to go over the subject carefully and to present what I can obtain from the authorities in regard to these peculiar discharges.

Great numbers of cases have been recorded, but no one, up to this time, has demonstrated conclusively the source of the flow.

The etiology of these discharges has been the subject of very different opinions by different obstetric authors. CHAILLY says that authors have attempted to show that these discharges are due to the accumulation of fluid between chorion and amnion; to rupture of lymphatic vessels; to transudation through amniotic membranes; to rupture of the membranes at some remote point from the orifice of the uterus, and finally, to dropsy of the womb.

LUSK says the pathological processes involved in the disease are vascularity, hyperæmia and hypertrophy of the interstitial connective-tissue, and of the glandular elements of the decidua.

BARNES, in the "System of Obstetric Medicine and Surgery," 1885, says in regard to these discharges, without entering into a critical discussion of the several theories, that it seems to be well established that there are five sources rom which this fluid may come:

1st. A discharge from the cervical canal.
2d. The decidual origin.
3d. Transudation through the amniotic membranes.
4th. Hydatidiform degeneration of the ovum.
5th. Cauliflower excrescences.

The *Differential Diagnosis* must rest between the following similar discharges:

I. From the discharge from hypertrophied cervical glands.

II. Fluid collecting between chorion and amnion, occurring only once.

III. Escape of fluid from amniotic cavity.

I. The fluid escaping from the hypertrophied glands must be small in quantity, and we would expect that it would continue for a considerable length of time. There would be no diminution in the amount of *liquor amnii* and the child would be found floating in the usual amount of fluid.

II. If the fluid collected between any of the membranes, and adhesive inflammation surrounding it followed, a considerable amount of fluid might collect, and the discharges would be considerable at once, and might or might not be repeated. In such a case there would be no evidence of escape of true amniotic fluid, although there might be a lessened size of the abdomen.

III. Where the *liquor amnii* escapes there would be a greater tendency to uterine contractions; a more perceptible diminution in the size of uterine tumor, and a microscopical or chemical examination would certainly reveal some evidence of urine, as we know this exists in variable quantities in the *liquor amnii*.

Transudation through the amniotic membrane, although recently noticed by BARNES, and mentioned by older authors, would give rise to the discharge of a very small amount of fluid.

This could hardly be differentiated from a slight discharge taking place from the cervical glands. Fluids discharged from hydatidiform degeneration of the chorion or from cauliflower excrescence, would be so associated with the diseases which cause them that the diagnosis would not be difficult.

Prognosis.—As far as my observation goes, the life of the woman is not jeopardized, but she suffers from the constant discharge and becomes anæmic. The pain is sometimes severe, as I have before remarked, and the patient is full of gloomy forebodings and anxious in regard to the final result.

The fœtus is usually born prematurely, and, in many cases, only lives a short time.

The treatment must necessarily be very simple—rest and anodynes being about all that can be suggested.

DISCUSSION.

DR. H. P. MERRIMAN: MR. PRESIDENT, I had one case of this kind about a year ago. The woman had a sudden gush of water when she was not quite five months pregnant. I thought it might presage labour, and told her to let me know of any symptoms of labour,—that I expected it would come on. But she felt better after having had the gush of water. She had, in the course of two or three weeks, another, and said she could tell when they were coming on, because she felt so full before they came. When the second came I began to think that perhaps she was not going to have labour at the present time after all; that it probably was not a loss of the amniotic fluid, and I examined her and found the os not dilated. I could feel, however, by carefully introducing my finger, that there was water still remaining there,—the amniotic bag remaining apparently intact. I gave her opiates, thinking that labour might possibly be prevented. She went along for nearly a month after that, before she finally miscarried. She had three separate gushes of water at intervals of two or three weeks before her miscarriage finally came on. The fœtus had perhaps a little over six months of intra-uterine life at the time of its expulsion.

It strikes me that we might learn by careful examination of the placenta and membranes after delivery, a great deal more than we have yet learned about this subject. I cannot help thinking that there must be some defect in the fœtal envelopes to have a thing like this occur. It could not have been a rupture of the amnion, but there may have been a separation

between the amnion and the chorion, as I have seen in one other case in my own practice, in which the infant or fœtus enveloped in the amnion came away, leaving the chorion within the uterine cavity. And we had a similar case presented to the Society a year ago, by Doctor SAWYER. The amnion had been separated from the chorion, and came away intact by an effusion of liquid between the chorion and amnion. Now, if that takes place, why of course there may be a separation in part and then adhesion again after the occurrence of the rupture. Any gush of this kind indicates, to me at least, some disturbance of the fœtal envelopes, either of the chorion or amnion, or a cystic degeneration of the placenta; and it strikes me that in every case of this kind the placenta and membranes ought to be carefully observed after the delivery, to see what pathological cause brought on the abortion.

I would like to state, in addition to my case, that the woman finally had her miscarriage quite suddenly. I was not present, and another physician was called.

THE CHAIRMAN: I would like to ask a question as to whether there is any specific cause operative in the production of these cases? Whether syphilitic or gonorrhœal infection may have anything to do with it, and also whether inflammation of the mucous membrane of the uterus precedes these causes? Is it, in other words, an acute or chronic inflammation of the mucous membrane that causes it?

DR. HENRY T. BYFORD: I have nothing to add, except that Dr. C. R. PARKE, of Illinois, reported a case to me, in which the discharge of the *liquor amnii* took place, labour pains came on, and the umbilical cord became prolapsed. He replaced the cord and gave ergot. As labour did not progress, he finally gave morphia and quieted the pains. In three months the woman was delivered of a living child; mother and child did well.

DR. H. P. NEWMAN: I saw a single case; the discharge however, was greater than in the cases related, and came on about six weeks previous to the abortion; the membranes were not examined.

PROFESSOR W. W. JAGGARD said that he had listened to the reading of Dr. EARLE's paper and the discussion with great interest. He could not, however, agree with the author of the paper in considering the pathology of *hydrorrhœa uteri gravidi* as obscure and confused in all its details. CARL BRAUN (*Zeitschr. d. Ges. d. Wiener Aerzte, 1858, No. 17, p. 257*) and C. HENNIG (*Der Katarrh der inneren weiblichen Geschlechtstheile, Leipz., 1862, p. 48*) had clearly and distinctly described the pathological anatomy of the condition. Chronic decidual endometritis may terminate in the formation of new connective tissue, or may manifest itself by the production of a yellow, sero-albuminous fluid, variable in quantity, which accumulates between *decidua vera* and *reflexa*, or when *vera* and *reflexa* are united, between decidua and chorion. CARL BRAUN accordingly considers the condition to be a *serous endometritis*. HENNIG aptly terms it *catarrhal decidual endometritis*. Catarrhal decidual endometritis must be distinguished from collections of fluid between the amnion and chorion, the so-called amnio-chorial water. BISCHOFF has designated the unorganized, albuminous fluid uniting chorion and amnion as the *tunica media*. The quantity of this fluid may increase abnormally, at the same time that its consistency is diminished. MCCLINTOCK describes a case, referred to by SPIEGELBERG, in which the amount of "amnio-chorial water" was so great as to simulate hydramnios. The "amnio-chorial water" may be discharged without the interruption of pregnancy, but then the discharge of fluid is not repeated as in the intermittent

discharges of *hydrorrhœa uteri gravidi.* Labour always follows the rupture of the amniotic sac,—a fact which establishes the possibility of a differential diagnosis in the large majority of cases. It is unusual for labour to be prematurely induced by the discharge of the "amnio-chorial water," or collections of catarrhal secretions between chorion and decidua.

A condition strictly analogous to *hydrorrhœa uteri gravidi* is frequently observed in uterine fibroids. The intermittent discharge of a yellowish sero-albuminous fluid from the uterine cavity is a symptom of such frequent occurrence in this condition that attention is directed to it by most systematic writers.

With reference to the ætiology of *hydrorrhœa uteri gravidi*, there were several facts of practical import. Any antecedent endometritis,—gonorrhœal, syphilitic or of other origin,—is an adequate ætiological factor. Hydræmia appears to favor the development of the condition. The coincidence of hydræmia with catarrhal decidual endometritis would certainly indicate the exhibition of chalybeate tonics in the treatment of the latter affection.

He fully agreed with Dr. MERRIMAN in attaching great importance to the critical examination of the fœtal envelopes in order to clear up a doubtful diagnosis.

DR. EDWARD WARREN SAWYER called attention to the fact that watery discharges from the uterine cavity frequently occurred during the *puerperium.*

He thought that the condition, technically termed *hydrorrhœa gravidarum*, was due in all cases to the transudation of the amniotic fluid. This was the opinion ably advocated by CHARPENTIER.

PROFESSOR W. W. JAGGARD thought Dr. SAWYER had not quoted CHARPENTIER correctly. CHARPENTIER mentions STAPFER's recent monograph (*Thèse de concours*, 1880), in flattering terms; enumerates the various hypotheses proposed by a large number of observers, and says the German theory, already referred to, is the most probable.

PROFESSOR CHARLES WARRINGTON EARLE :

I have but very little to say, Mr. Chairman, in closing the discussion. It seems to me, however, that there is one thing, at least, that we should learn from our consideration of this subject this evening. It seems to be impossible for any one to determine the exact source from which a considerable amount of fluid is occasionally discharged from the vagina of a pregnant woman. We do not know whether this fluid comes from the amniotic cavity or external to it ; therefore, we should not give ergot or commence the dilatation of the *os uteri* after a watery discharge, believing that labour must come on, because from the testimony we have received here to-night, and from other evidence, it does seem that even if the *liquor amnii* is prematurely evacuated in a few cases, pregnancy may go on to full term.

My attention has been called to the phenomenon mentioned by Dr. SAWYER, and if I had not desired to make my paper as brief as possible, I should have spoken of the watery discharges which occasionally take place after labour. I have never seen a case, but it is mentioned in the literature, and it is believed by those who have written upon the subject that the fluid in these cases comes from either the large lymphatic vessels, or perhaps from a continuation of the same disease which produced the discharge before.

The Doctor is certainly not quite in accord with the majority of authorities when he says that the discharges of pregnancy always come from the cavity of the amnion.

DR. EDWARD WARREN SAWYER:

No; but the term "hydrorrhœa" should be reserved for that class of cases.

PROFESSOR EARLE:

This is not hydrorrhœa, as I understand it. This term should be applied to a discharge of fluid from outside of the amniotic membrane; perhaps not from outside of the chorion, but certainly from outside of the amnion.

II.—DR. E. J. DOERING read a paper entitled:

REPORT OF A CASE OF HYDATIFORM PREGNANCY.

After a brief discussion of the ætiology and pathology of cystic degeneration of the chorionic villi, Doctor DOERING related the history of the following case:

Mrs. W. D. P., a cultured lady, of slender physique, twenty-one years of age, was attended by me in labour fifteen months ago, and delivered by instruments of a healthy boy weighing ten pounds. Her general health has been good. She has had no miscarriages either previous to or since the birth of her child. Her last period occurred during the latter part of October, 1885. During the month of November the catamenia remained absent, which she attributed to a cold, the idea of pregnancy not occurring to her, as she had none of the usual symptoms. During the month of December, and particularly during the week preceding the holidays, she was on her feet constantly, although not feeling well, having sensations of chilliness, followed by a feeling of heat and general depression. On the Sunday before Christmas a slight and painless flow of blood commenced, believed by her to be the period, now four

weeks overdue. The flow continued several hours and then ceased. On Christmas day, while seated at the dinner-table, she was suddenly attacked with a profuse hæmorrhage, the blood saturating the floor, and continuing until a degree of faintness was produced, in which condition I found her on my arrival a few minutes afterwards. The hæmorrhage, which had been entirely without pain, ceased suddenly. A careful examination confirmed my suspicion of pregnancy, although I was much surprised at the size of the uterus, corresponding to a four and one-half months' pregnancy, the fundus rising nearly midway between the symphysis pubis and the umbilicus. There being no further hæmorrhage, no pain and no dilatation of the os, an expectant plan of treatment was pursued by instructing the patient to keep in bed, enjoining absolute rest, and giving her a few doses of morphia. On the following night another hæmorrhage occurred, but of not much consequence, and requiring no interference. Two days later, on the morning of the 28th of December, another hæmorrhage took place, more copious than the last one, but still unaccompanied with pain. An examination showed slight dilatation of the os, but not sufficient to permit the recognition of the contents of the uterus. As the patient was beginning to show decided symptoms of anæmia, the vagina was tamponed and ergot administered to check the hæmorrhage and favor uterine contractions.

Uterine pains soon commenced, accompanied by considerable hæmorrhage; the os dilated fully one inch, the presenting part giving the sensation to the finger of a blood-clot. This was soon expelled in detached portions, and on removal from the vagina was readily recognized as a hydatiform mole, having all the characteristic appearance of a grape bunch, composed of a mass of translucent vesicles, about the size of

currants, containing a clear, limpid fluid. After inserting two fingers into the uterus and emptying it as thoroughly as possible of all the diseased tissue, the hæmorrhage promptly stopped. The entire mass removed equaled about the size of a large orange. Some febrile reaction occurred, but for several days the temperature did not exceed 100½F°. and the pulse 95, the treatment consisting of quinine and ergot, internally, and the use of uterine and vaginal injections of carbolized water.

On the beginning of the fourth day the patient was suddenly seized with a severe chill, followed by the usual symptoms of septic poisoning, high temperature (104½°F.), rapid and feeble pulse, superficial respiration, great tympanites, thirst, vomiting, and arrested lochia, with no pain or tenderness over the abdomen. The outlook was anything but promising, but the prompt administration of large doses of quinine, combined with diaphoretics, turpentine stupes, warm fomentations, and the continued use of antiseptic injections was followed by the most gratifying results, and after four days of great anxiety the patient had recovered sufficiently to be declared out of danger. At the present time, eighteen days since the expulsion of the mole, the patient is up and about the house, with a good appetite, and making preparations to leave in a week or two on a journey to the south.

DISCUSSION.

PROFESSOR CHARLES WARRINGTON EARLE: I have seen two cases of this kind, and while I have been surprised a great many times in my practice, I was never more so than upon one of these occasions. I had been in practice about two years, when I was called to attend a lady in confinement near my residence. I placed myself at her bedside, found the *os uteri* well dilated, with the membranes intact and well down

in the vagina, when all at once there came a gush of something, and a large quantity of these grape-like bodies made their appearance. I immediately gave ergot and cleared out the uterine cavity, and took the first opportunity to repair to my study to seek an explanation of this, at that time, to me a strange phenomenon. The case was eventually made the subject of a little article which appeared about that time in the *Chicago Medical Examiner*.

The lady was anæmic, and made a slow but perfect recovery. She has enjoyed good health since, but has never again become pregnant.

DR. HENRY T. BYFORD: I had an opportunity to see this specimen, and it was very much like a bunch of grapes in shape, although BARNES, I believe, claims there is no such resemblance. But he bases his views upon the fact that the vesicles are developed from each other instead of from the common stem.

In regard to the treatment, I think it would now be considered best to scoop out the uterus to prevent septicæmia, and so it would be, if that could be easily done. From inquiry of Doctor DOERING, I understand the opening in the cervix was rather small, the body anteverted, and it would have been necessary to use an instrument in removing the mole. I have seen severe inflammation in the broad ligaments result from curetting the uterus after abortions, with the dull curette. Therefore, I think it is a point of interest well illustrated in this case, that it is not in every instance the proper thing to do; especially when so much has been passed that there is pretty firm tonic contraction of the uterus.

DR. H. P. NEWMAN: I understood DR. DOERING to say he used ergot. This might explain the fact of finding the cervix closed.

DR. DOERING: I would like to ask DR. EARLE whether he discovered any trace of the fœtus.

PROFESSOR EARLE: I did not in my case, but there is a specimen in the museum of the College of Physicians and Surgeons in which the fœtus is one and one-half inches long.

DR. CHARLES CALDWELL: I met with one case in my practice last fall. October 10th, I was called early in the morning, the messenger informing me his wife was having a miscarriage. I found my patient flowing quite profusely. She supposed herself five months pregnant, as she had not menstruated since May.

The last week in July, she flowed slightly for two days. The 12th of August, the flow commenced again, and was so profuse that she went to bed and called a physician, who diagnosed her case threatened abortion, and treated her accordingly, keeping her in bed two weeks. From that time until the hydatidiform mole was expelled the flow never stopped completely, for a single day, but she passed no pieces of the mole. The os was soft and easily dilated. I introduced two fingers into the uterine cavity and removed its entire contents. The mass was too large to be removed intact, and the os was not sufficiently dilated. As I removed each piece the uterus contracted well and firmly, diminishing the size of its cavity rapidly, so I was sure when it was empty.

The lochial discharge kept up for three days. She remained in bed one day, but the next morning prepared her husband's breakfast, and has attended to her household duties since. There were no symptoms of septicæmia following. The broken mass would have filled a two quart measure. Some of the cysts were as large as a bean. I gave

PROFESSOR JAGGARD a specimen to show his class. No fœtus could be found in the mass. Small doses of ergot were given for a few days. Menstruation was established in December, and the patient is now strong and healthy.

III.—The inaugural thesis of PROFESSOR F. E. WAXHAM, M. D. (Chicago Medical College, 1878), entitled:

"INTUBATION OF THE LARYNX, WITH HISTORY OF CASES," was read by the SECRETARY, EDWARD WARREN SAWYER, M. D.

PROFESSOR WAXHAM described DR. O'DWYER's method of intubation of the larynx, narrated the histories of seventeen cases, in which the method had been employed, and drew the following conclusions:

"Intubation of the larynx possesses many advantages over tracheotomy:

"1. No opposition is met with on the part of parents and friends; quite a contrast to the difficulty which we usually meet in obtaining the consent to tracheotomy.

"2. It relieves the urgent dyspnœa as promptly and as effectually as tracheotomy, and if the child dies there is no regret that the operation was performed, and no discredit is attached to the physician.

"3. There is less irritation from the laryngeal tube than from the tracheal canula. As the tube is considerably smaller than the trachea, it does not press upon it firmly at any portion excepting at the chink of the glottis.

"4. Expectoration occurs more readily than through the tracheal tube.

"5. As the tube terminates in the throat, the air that enters the lungs is warm and moist from its course through the upper air passages, and there is less danger of pneumonia.

"6. It is a bloodless operation.

"7. It is more quickly performed and with less danger.

"8. There is no open wound that may be the source of constitutional infection.

"9. Convalescence is more rapid, as there is no ghastly wound to heal by slow granulations.

"10. The patient does not require the unremitting care of the physician, as in tracheotomy.

"11. I believe it to be a more successful method of treating croup, either diphtheritic or membranous, than tracheotomy.

"The only objection to the operation of intubation is the difficulty of its performance."

DISCUSSION.

PROFESSOR CHRISTIAN FENGER: MR. PRESIDENT, this is a subject of exceeding interest and deserves great attention. Tracheotomy is one of the few operations that always make me nervous. That this operation is attended with some danger there is no question. There is danger from hæmorrhage during and after the operation, and there is some danger of shock, which in cases where there is no membranous laryngitis, sometimes can be traced only to the operation. For instance, I years ago went to make an examination of an old man who had swallowed a little fish bone, that had got into the mucous membrane in the entrance to the larynx, during dinner. Œdema of the glottis necessitated tracheotomy, which was performed without an anæsthetic. There was no hæmorrhage, the dyspnœa was relieved, but the man died about twenty-four hours afterwards from the shock or disturbance attributable only and alone to the operation. In other cases hæmorrhage, even under great care in the operation, cannot always be avoided. I

have had two cases of such hæmorrhage where the patients have died, one in two hours and another in five hours subsequent to the operation, not on account of the amount of hæmorrhage, but on account of the disturbance in the lungs, caused by a moderate amount of aspirated blood. So if it is possible to get around the tracheotomy in some other way, then I for one would embrace it with the greatest of pleasure. However, when I saw PROFESSOR WAXHAM'S intubation—which I looked forward to with great interest—I got afraid of the tubes slipping into the air passages so I could not get hold of them again. That is one thing, and another that came into my mind was the small caliber of the opening in the tubes. I had an opportunity to see a little child that he operated upon where the operation was easy, and relief was instant, and that is all that I have seen as yet of the matter. Then, of course, I read the paper. There is one thing that I would be rather afraid of,—but that is a theoretical objection only,—that is, to leave the child without taking the tube out. It seems from the cases reported, however, that in those cases there has never been much trouble of this kind, and theory of any kind is of no value whatever compared with facts.

I believe that this matter is very worthy of careful consideration; but, on the other hand, not until a larger number of cases have been tried will we be able to form any definite opinion about it. But we know enough from the cases recorded here to be desirous of having this new matter tried.

PROFESSOR F. E. WAXHAM, M. D., was then elected Fellow of the Society.

W. W. JAGGARD, M. D., *Editor.*

22d February, 1886.

2330 Indiana Avenue.

BOOK REVIEWS.

FACTS AND MYSTERIES OF SPIRITISM. *By* JOSEPH HARTMAN. *12 mo, cloth, pp. 378. Philadelphia:* T. W. HARTLEY & CO. *Chicago:* JANSEN, MCCLURG & CO. 1885.

The verdict of common sense would naturally send the author to an insane asylum; but in that light, Swedenborg, and even St. John, would have been considered insane, as far as their hallucinations or visions are concerned. If Mr. Hartman is insane, we must confess that he is a most intelligent lunatic.

This book is a graphic account of the obsession of the author by evil spirits for a space of time extending over seven years. The terrible effects of these hallucinations could not have been better described by any one than by the sufferer himself. The book will furnish valuable material for the study of insanity, inasmuch as it contains eleven cases of obsession besides that of the author. That such cases are often sent to insane asylums is not surprising, as that is about as good a place as any in which they could be properly taken care of; yet, from the frequency of milder forms of hallucination, in people of perfectly sound mind, a greater discrimination ought to be exercised in the examination of the insane than is done nowadays. This duty ought to be intrusted to physicians possessed of more than plain common sense. This book is well written, and nicely

printed. Its theories will play havoc in the spiritualists' camp, for the author, from his familiarity with evil spirits, has ceased to believe that good spirits can manifest themselves to the living. It is to be hoped that the majority of readers are proof against the contagiousness of such hallucinations, which would carry us back to the dark ages when our ancestors walked on four. But Mr. Hartman deserves our sympathy for his peculiar belief, for, hallucinations being mostly reversals to ancestral ideas, and our ancestors having sprung from the quadruped family, one would naturally expect that the revelations of spiritualism would turn out to be nothing but the remembrances of beastly memories.

H. D. V.

ITEMS.

Minister's wife (looking over the paper): "You are referred to in this morning's paper, my dear, as a distinguished clergyman."

Minister: "H'm! I thought that my sermon yesterday would attract attention. Is it published in full, or only a synopsis given?"

Wife: "Neither; you are spoken of as a 'distinguished clergyman' in connection with that patent medicine testimonial you sent Dr. Quack."

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ORIGINAL COMMUNICATIONS.

INSANE HOSPITAL SUPERVISION.

Quis Custodit Custodes.

[Read before the New York Medical Jurisprudence Society, February 11th, 1886.]

By E. C. SPITZKA, M. D., New York. *Late Professor of Anatomy of the Nervous System, New York Post-Graduate School of Medicine.*

It is not a great many years since a distinguished British alienist, commenting on the management of American insane hospitals, took occasion, with special reference to the Blockley alms-house insane-hospital, Philadelphia, and the kindred institutions on Blackwell's and Ward's Island, New York, to say that no American could contemplate their condition without a feeling of humiliation. He found that while the state hospitals bore comparison with the better class of similar institutions in Europe, the management of the county hospitals of the larger cities was so inseparably tied up with local politics as to be beneath criticism. On one occasion he had pointed out to him the President of the Charity Commission of one of our large cities; "his colleagues engaged in

business, leaving almost all the power in his hands. He was a *politician*, in the American sense of the word, which is not complimentary, and had begun his official career as night-watch in a hospital," and this remarkable fact is cited as an apt illustration of the correctness of his inference. To us, who have seen the ex-night watchman riding in grand regalia at the head of the political processions with which we are occasionally afflicted, there is nothing very startling in it. On civil service grounds, perhaps a man who is capable of marshalling such a rank and file as comprise these processions, and who has served in the ranks himself, is just as fit to occupy an office which unsophisticated people are apt to consider only gentlemen and scholars eligible to—as a militia brigadier is fit to be President of the Board of Health. Still, in his main inference the distinguished foreign writer is correct; offices connected with the management of sanitary and humanitarian interests are too apt to be sought for by those who have failed in other departments of business or professional activity; they are often persons who seek through the devious channels of patronage what they could not obtain through merit and in healthy competition. The consequence is, the preponderance of non-expertness in the management of many of our institutions. The inmates are comparatively fortunate if immorality, corruption and positive brutality are not also engendered by the same system. Without making too specific and personal references, it may be said that even the medical offices of insane hospitals are not as free from these influences as they should be. The reason is, that men of character—and the true physician must be a man of the very highest character—do not usually possess the political requirements for political positions. When an ex-horse-car con-

ductor and an ex-supervisor of a bathing establishment graduate into superintendents of insane-hospitals situated within a radius of fifteen miles of one of our large cities, it must be admitted that the percentage of those in office who have not had the best opportunities for acquiring an elaborate training in one of the most profound medical specialities is by no means small. Of the frivolous political reasons for making changes in insane-hospital medical care which have afflicted the United States, one of the most glaring is the following: The people of Virginia, in 1882, were divided on a state debt issue. Among those who favored the payment of the debt were all the superintendents of asylums in the state, and they were summarily dismissed from office on the success of the repudiation measure. Changes of this kind, which are exceedingly frequent in many states, naturally lead to the inquiry as to what means of supervision exist to detect the evils resulting from such political changes.

In every community there are a number of ladies and gentlemen who, besides leisure and wealth, possess a kind heart and a disposition to improve the condition of their less fortunate fellow beings. The prominence of these in the community and the influence they exert, may be almost claimed as peculiar to the Anglo-Saxon race. Howard, the English prison reformer, our own Howe, the educator of the deaf and dumb and philhellenist, the Earl of Shaftsbury, who became the English champion of the insane, as Miss Dix became the American, are examples of this. Efforts, sometimes spasmodic, sometimes enduring, are made by such philanthropists to neutralize the bad features attendant on the political managements of alms-houses, asylums and jails. Their inquiring spirit and reformatory tendencies soon earn them the

stigma of being "cranks;" the politician views them with distrust if not with positive hatred; for the brutal prison task-master, the thieving alms-house supervisor, the negligent asylum attendant, are never quite secure against an unexpected visit and ensuing denunciation by some one of these people. It occurred to the Dædalian mind of some brilliant legislator to turn the stream of threatened investigation and reform into official channels, and "Boards of Charities" were organized. Thereafter, when any meddlesome individual undertook to criticise the food, the medical or other treatment of paupers, prisoners or the insane, he was told that he was misinformed; that abuses were impossible as long as there existed a State Board of Charities, composed of gentlemen of the very highest character. On many occasions, cruel or indolent or incompetent officials were able to shield themselves behind these "gentlemen of the very highest character." It has been well said by the late Dr. Wilbur: "The model on which our State Boards of Charities have been formed is that of the English Commissioners in Lunacy. To its high intelligence and ability, together with its entire independence of party and class interests, the acknowledged superiority of the English system of provision for the insane is chiefly due. . . . Yet the legal powers of these commissioners are as limited as those of our State Boards of Charities. They can do little but advise and remonstrate against abuses personally and through their reports. How is it the English Commissioners in Lunacy accomplish so much and our State Boards of Charities accomplish so little?" It must be admitted that, as a rule, State Boards of Charities are of unexceptionable composition, their members good men, and in the majority men of substance: still the difficulty

lies in the organization of these bodies, the position of member on this board, as in England, is an unsalaried one, and there is but the technical obligation on him of performing any but the most perfunctory duties. There is one salaried officer, usually called a secretary, who in some cases owes his position to a long course of toadying to some political matadore, finally becomes the impersonation of the Board, and impresses on it all the objectionable characters of a political organization. It must be evident that under such conditions the State Boards of Charities too frequently serve as bulwarks to the politician, and in place of exposing abuses simply serve to strew dust in the eyes of the public by superficial inspections.

The inadequacy of these State Boards to perform these assigned functions is illustrated every year, and in almost every state. The Tewkesbury alms-house horrors developed under the fostering eyes of such a Board; the rowdy management of some county asylums in New York and New Jersey still continues, although it must in justice be admitted that in New York, Pennsylvania and Wisconsin whatever reform has been accomplished is due to the efforts of State Boards of Charities, fought as they were by an unscrupulous insane-hospital ring. Long ago recognizing the inadequacy of even the best State Boards of Charities to perform the duties incumbent on them, I suggested in 1878 that every large state should have three State Commissioners in Lunacy to whom the supervision of the insane should be relegated. I again suggest this, and with the view of illustrating the valueless character of the inspection of the average State Board, I have ventured to bring before you one glaring instance. In order to avoid the imputation of being

personal in my references, I have selected one which exercises its functions a thousand miles distant from New York. I shall ask you to listen to the evidence, derived from and under the very auspices of this State Board itself; and if your verdict will not be that this body stands self-convicted of a violation of the "Golden Rule"—though its active head be a clergyman—I shall have very much overestimated the gravity of this Board's predicament. It may be admitted at the outset that this Board's powers were less than those of the Pennsylvania and Wisconsin Boards, although I shall show that its members did not exercise the powers given by the law which created it.

The Illinois State Board of Charities was created in 1869. The third section of the act creating it says: "The said commissioners shall have full power, at all times, to look into and examine the condition of the several institutions which they may be authorized by this act to visit, financially and otherwise; to inquire and examine into their methods of instruction, and the government and management of their inmates, the official conduct of trustees, directors, and other officers and employés of the same; the condition of the buildings, grounds, and other property connected therewith, and into all other matters pertaining to their usefulness and good management; and for these purposes they shall have free access to the grounds, buildings, and all books and papers relating to said institutions; and all persons now or hereafter connected with the same are hereby directed and required to give such information and afford such facilities for inspection as the said commissioners may require. § 4. The said commissioners, or some one of them, are hereby authorized and required, at least twice in each year, and as much oftener as they may deem necessa-

ry, to visit all the charitable and correctional institutions of the state, excepting prisons receiving state aid, and ascertain whether the moneys appropriated for their aid are or have been economically and judiciously expended; whether the objects of the several institutions are accomplished; whether the laws in relation to them are fully complied with; whether all parts of the state are equally benefited by said institutions, and the various other matters referred to in the third section of this act; and report in writing to the governor, by the fifteenth of December, annually, the result of their investigations, together with such information and recommendations as they may deem proper; and the said board of public charities, or one of them, shall make any special investigation into alleged abuses in any of said institutions, whenever the governor shall direct, and report the result of the same to the governor. § 5. The said commissioners, or one of them, shall also, at least once each year, visit and examine into the condition of each of the city and county alms or poor-houses, or other places where the insane may be confined, and shall possess all the powers relative thereto, as mentioned in the third section of this act." That the law contemplated more than a cursory examination is shown by the following sections: "The said commissioners, or any one of them, are hereby authorized to administer oaths and examine any person or persons in relation to any matters connected with the inquiries authorized by this act. Any actual outlay for any actual aid and assistance required in examinations and investigations, on being made out and verified by the affidavit of the commissioners making the charge, and approved by the governor, shall be paid by the treasurer, on the warrant of the auditor of public accounts, out of any moneys in the treasury not otherwise appropriated."

In the vicinity of the "Queen City of the West," as it has

been exultingly termed, stands a large four-story brick building with diminutive windows, surrounded by numerous cracks and of a decidedly dilapidated appearance. This is the Cook County Hospital for the Insane. The insane in that state are still subjected in the county institutions * to treatment as vile as that of the days antecedent to Pinel and Chiarruggi. Of the early days of this institution there is but little history, but dark dungeons with chain attachments for the insane had been in use as late as 1875. This hospital's government is in the Board of County Commissioners, who name annually a Committee of Public Charities, who look after it and the county poor-house, of which, until a few years ago, it was a department, and is now on the same ground, though having a separate existence. The relations between the two are still very close. The Committee on Public Charities is composed of five members of the county board. The board elects the medical superintendent, the warden, the engineer and the druggist and assistant physicians; the engineer appoints his own assistants; all other employés are appointed by the warden. The influence of the county commissioners on these appointments is confessedly great. The Committee on Public Charities makes the purchases on requisition of the officers, usually after asking and obtaining authority to do so from the full board, though this is by no means an invariable rule of action; the bills are sent to the warden, who compares the items charged with the goods received and checks them as correct—with the prices paid he has no concern; the duplicate is retained at the institution, but the original must have the affidavit of the party furnishing the goods attached to it, and is submitted by the committee to the board, with a recommendation that it be paid, and it is paid after a vote approving the recommendation by

* CHICAGO MEDICAL JOURNAL AND EXAMINER, November, 1885.

the board, and placed on file in the county clerk's office. This organization varies in its details, at different times, according to the will of the county board or the committee on charities. From two-thirds to one-half of the county commissioners are low saloon keepers, and two of them supply with liquor two drinking-houses, licensed by the county board, in the immediate vicinity of the hospital and poor-house,—places of resort for the employés of both institutions.

An institution so ruled and governed, it is needless to say, should have been regarded with constant suspicion, and the results of any inspections brought constantly before the public; but the first knowledge the public had of the bad management of the institution was due to the self-sacrificing labors of Dr. J. S. Jewell, who in 1875 made a pains-taking investigation and found iron handcuffs in use, food of the vilest quality, bad drugs, bad clothing, drunken male and female officers and attendants, and dances of an improper character, and brought these facts before the Chicago Medical Society. The grand jury thereupon indicted the county commissioners, but from his efforts at reform, backed though they were by the feeling of the community, the State Board of Charities held stubbornly aloof.

A reform was made of a temporary character. Drs. Jewell, Brower, Lyman, and some medical politicians, were appointed an advisory board with the following powers: "It shall be the duty of the Board to confer with the Committee on Public Charities with reference to the condition and necessities of the asylum, and to make to the committee a quarterly report of the results of their investigation. They shall also, in conjunction with the Committee on Public Charities, recommend to the Board of Commissioners such persons for Medical Superintendent as, in their judgment, are suitable for

such position. Any dispute which may arise concerning the medical management of the Institution shall be referred to the Advisory Board, in conjunction with the Committee on Public Charities, for investigation." But their recommendations were so persistently ignored that, worn out by circumlocution and insults, Drs. Jewell, Brower and Lyman resigned, and the ward political magnate once more reigned supreme over the insane of Cook county. Dr. Moyer, an interne during 1879–1880, states that the attendants were rough and brutal, the food poor and the medical supervision *nil.*

During 1883 the improper treatment of the patients and the character of the food were so notorious that more than one grand jury was anxious to investigate, but failed because they were repeatedly hoodwinked by the commissioners. Scurvy * was frequent and intoxication common. The death rate at this time was: males 23 per cent., females 24 per cent. The only American institution which that year had a death rate of more than 10 per cent. was the State Emigrant Insane Hospital, New York, which had a death rate of 17 per cent., the highest rate being among the females, and this was shown by legislative investigation to have been horribly mismanaged. According to the best authorities the average American death rate was 5–7 per cent.; and when it is much more than eight, in the absence of an epidemic, the increase is due to bad food, insufficient clothing and improper attendance.

At this time the State Board of Charities † was lauding the Superintendent for reducing restraint, although it was then used at the discretion of the attendant; although patients were

* Testimony of Mr. Harpel and Dr. Clevenger. CHICAGO MEDICAL JOURNAL AND EXAMINER, January to May, 1884.

† Report for 1883.

seated at the table for their meals in a straight-jacket; one jacketed, with a portion of food before her, eating it as a dog would. And the attendant, when spoken to about it, replied, "She always does so; even if she was not jacketed she would not eat any other way." But that very patient was taught to eat differently in 1885. Although working patients were treated like this: A very respectable mechanic had been employed to oversee the demolition of the old poor-house, had a room in the hospital, opportunity to observe the treatment of the patients there, as well as on the outside, when at work. It was a common thing for the attendants to threaten patients who would not work, with the straight-jacket. On one occasion a patient at work complained of being ill, and was continually going for water. The attendant said to him, "Come, Jack, if you won't work I will put the jacket on you." "I can't work." "Well, I will put the jacket on you." "Well, I'll take it, sooner than work." "Come with me." They went into the ward together, and Mr. H. followed after them, in a few minutes, when he saw Jack with the jacket on. The next day Jack came out again to work, but was unable to do so. The third day he stayed in the house; and the fourth day he was dead. The clinical clerk informed Mr. H., in answer to his inquiries, that he had died of typhoid fever; although attendants locked patients up for not doing fancy work.

They commended the Cook County Insane Hospital management as equal to the best State asylum; although no histories of cases by the physician in charge were kept; no census, and very meager records of any description; although the visits of the Superintendent to the wards were few and hasty; although in each ward was kept a bottle of whisky and a bottle of strong sleeping medicine of bromides and chloral, which the

attendants dealt out at their discretion; although among attendants it was a common remark: "It is no use doing anything for these cranks;" although the physician was called only as a last resort, and informed of the condition of the patients and the attendant's therapeutics in the following language: "I gave her a drink of whisky and then a dose of sleeping medicine, but she did not get any better, so I called you;" although the real needs of the patients seemed to call for no thought; although they had no bath-towels, and attendants were in the habit of putting the clothing on the patients without drying the skin; although the wards were frequently cold, and the patients had no winter clothing. Many who would have been benefited by out-door exercise did not leave the ward for six months, because there were no wraps; although the quantity of flannel purchased annually did not average two yards for each patient;* although, to use the language of the Board † itself, the patients were so thinly clad in winter as to prevent any exercise in the open air, and to occasion great suffering inside the house, whenever, for any reason, the supply of heat was inadequate; although before the introduction of direct radiation (1884) it was impossible to heat the building properly; and, even after that improvement, the thermometer in some of the wards was at times as low as 55° F.; although the heating was unequal, sometimes insufficient and at other times excessive; although there were four rooms in the west wing into which it was impossible to force hot air; although straw beds were the rule, hair mattresses the exception; although great difficulty was experienced in obtaining straw, and hay had sometimes been used instead; under these circumstances, the straw cannot have

* Testimony of Mrs. Lowell, Dr. Howe, Mr. Hughes, Mrs. Welker.

† Report of the Board for 1886.

been renewed as often as desirable; although the number of blankets was but four pairs to every three patients; considering the destructive habits of the insane, and the want of sufficient stock on hand, this allowance should have been at least one pair a year to each patient; although there were but few quilts; although the clothing and cleanliness of the patients received but little attention, and for weeks and weeks the patients were without fine-tooth combs: although diarrhœa and scurvy* were frequent and but little attention was paid to the diet: sick patients were fed with the same food as the others. The great article of diet was pigs' heads, boiled without being shaved or cleaned. Hogs' ears, with the hair on them, were often set before the patients to eat. Bunches of hair half as large as a little finger were to be picked out from the patients' food. Although dying patients were fed on sour milk: although the milk, which is so great a necessity to the treatment of the insane, was almost never fit for use; although they had meat never more than once a day, and often not that, and the meat frequently stank: although incidents like this were frequent: Mr. H. observed it one day, when its appearance led him to ask the butcher, "What do you do with that?" "That's for the cranks." "In the name of goodness, you don't cook that for them?" "Oh, that's good," he replied, "they don't know the difference;" although patients died from innutrition, owing partly to their own indisposition to take food and the neglect of attendants to feed them: although the quality of the drugs may be judged from the fact that the mercurial ointment contained but ten per cent of mercury; although Saturday night dances already mentioned were marked by the conduct described

* CHICAGO MEDICAL JOURNAL, January, 1884.

years ago by Dr. Jewell. Every Saturday and Wednesday a dance was held, and beer kegs were frequently brought up into the dance hall and emptied by the attendants and employés after the patients had retired, festivities being kept up till morning.*

Although the superintendent† in charge avowed as a settled principle that he did not believe in watching his employés, and this at a time when appointments in the institution were made more on account of politics than on account of qualifications for the positions, and the appointments were chiefly made by the Chicago Boss, a prominent gambler. The Board itself says: "Insane people are, from the nature of their malady, unreasonable, exacting and irritating, sometimes dangerous; attendants often feel a contempt for them, especially if they belong to the pauper class; and, in an institution like Dunning, there will always be unkindness on the part of certain attendants, which will be heightened if the discipline is lax. A large part of the duty of every physician of an insane hospital consists in watching attendants, weeding out the incompetent and unfaithful among them, and supplying their places."

With such an avowed policy by a superintendent as the above, with the fact of an enormous death-rate, with the character of the persons making appointments, with the previous history of the insane-hospital, the notoriety of the abuses in mind, it must be obvious that a careful, exact, suspicious investigation every year was absolutely necessary; but the examination on which all these laudations were based

* Evidence of Dr. Howe, Dr. Clevenger, Mrs. Lowell, Mr. Hughes, Mrs. Welker, Mrs. Heintz.

† Testimony of Dr. Spray.

was made, not by a commissioner or the secretary, but by the accountant of the Board.

September, 1884, Dr. J. G. Kiernan was elected medical superintendent, and a warden, an ex-gambler, was elected, who had charge of the financial and domestic management. On Dr. Kiernan's entrance he found that more than one-half the employés were appointed on the demand of a county commissioner, the keeper of a low gin-mill, the lieutenant of the boss of Cook county, the gambler beforementioned. One-half of these employés had been there for years.* The male attendants were, as a rule, coarse, brutal men, and within two months Dr. Kiernan discharged five of them for striking patients; receiving his first taste of the discipline hitherto prevalent in the institution by being knocked down and called a "crank" for interfering with one individual amusing himself by pounding a dement. . . . . The engineers and other mechanics had keys to the female wards, and frequently visited them in an intoxicated condition, often cursing the attendants. There was no means of determining just what patients were in the building, and, as a careful census revealed, there were four more patients on the register than in the institution. In a remote ward patients were found with ulcers swarming with maggots, and none of the patients of the ward had been out for months. The drug store was destitute of the most necessary articles, there being but one drachm of quinine in the whole building, and many patients ill from low types of intermittent fever. The drug store was a gin mill to which employés invited the politicians who visited them. The druggist, a

* Testimony of Drs. Spray, Kiernan, Howe, Clevenger, Mrs. Lowell, Mrs. Heintz, Mrs. Welker, Mr. Hughes.

conscientious, able pharmacist, complained bitterly of being turned into a bar-tender, as he did also of the vile drugs sent him.

Dr. Kiernan asked for 300 overcoats and 300 shawls; the committee allowed him of each fifty. He wanted fine combs, and could not get them, nor could he procure fresh vegetables. The peculiar nature of the institution may be judged from the following facts: Poker-playing was carried on in a room in the basement, where cigars are sold. Both male and female employés sat on the stairs in dark passages at night. Male employés were in the habit of visiting female attendants socially, in their wards, in the evening after the patients had retired. Keys to these wards were given to the mechanics employed about the building, and the character of its discipline may be judged from the following incidents: On one occasion there was a row between a male attendant and the laundryman; on another, the assistant engineer slapped a female attendant in the face. Dr. Kiernan said that male employés should not go through the female wards; Mr. Kavanaugh, the engineer, said that they should. Dr. Kiernan was knocked down by an attendant, struck by the engineer, and choked by the night watchman, so that he had a hæmorrhage and was confined for some time to his bed. Some unknown person fired a shot into Dr. Clevenger's room, on the night after the presidential election, and the ball was stopped by a book in the book-case a few feet from his wife. Disobedience to orders was not always followed by discharge. Dr. Kiernan had power, for three months after his appointment, to discharge attendants; then it was taken from him. The housekeeper, Miss McAndrews, took a patient suffering from some female disorder out of her ward

and set her to scrub, in violation of orders; when Dr. Kiernan expostulated with her, she replied, "I do not propose to have anything to do with you or your orders." The whole medical staff united in a request for her discharge, but it was refused; Commissioner Leyden said that if Dr. Kiernan continued to insist upon her discharge he would make it hot for him, which he proceeded to do. In consequence of the horrible cooking, Dr. Kiernan tried to procure the discharge of the cook, but failed. This cook threatened "to lay the doctor out." Miss Finerty had been cautioned that a certain patient was not to be left alone in the ward, but taken out when the rest were; she disobeyed, left her in her room, and while there she hung herself; in consequence of this suicide there was an investigation by the Committee on Charities, when the warden and Commissioner Van Pelt said that she should be discharged, but Commissioner J. J. McCarthy said that she should not be, and she was not, and is in the institution now. A Miss Thornton, a sister of the boss gambler's bar-keeper, in charge of an epileptic ward, was found by Dr. Kiernan repeatedly in bed asleep, and the ward-keys in the hands of the patients, but despite his repeated requests she is still an attendant. It is not surprising, therefore, that such employés testified that he was very unpopular. They thought that he required too much of them, and that he was too ready to ask for their dischage.* One special ground of complaint was that he did not allow the attendants every other afternoon off duty, when in no institution in the world are attendants allowed every afternoon off duty, and the number of attendants, not excluding those off on leave, in the Cook County Hospital for the Insane is but one to sixteen—much

* Testimony of Miss Thornton.

too few in any case. Commissioner Ochs testified that Dr. Kiernan was unpopular because the employés thought he was too strict about restraint and the treatment of patients.

Persons so guarded by political influence would naturally look upon any inspection of them as an insult, and it is not very surprising that when a supervisoress * attempted to perform the duties incumbent on such officers, the result should be that in a few months the warden* called her into the parlor, to speak to her in private, when he said: "I would rather part with my right arm than tell you what I have got to say to you. I shall have to ask you for your resignation. You have fulfilled your duty here in every respect. There is no cause for your dismissal, but you are not popular with the attendants—the simple fact is, you are too much of a lady to be here. It is either you or I: you will have to go, or I will have to go. You are not popular with the commissioners; they do not know you, and the plain truth of the business is, you are not in the ring." Of course her successor took very good care to be popular with the attendants, whose general character was *well* summed up in the fact that while there were some who were most excellent, conscientious, and endeavored to mitigate the sufferings of the insane in every way possible, they were in a minority, and overawed by those who were not inclined to do their duty.† The character of the female attendants, as a rule, may be judged from the fact that to the two drinking places already mentioned a female attendant took two female patients, at different times, and treated them there. In the fall of 1884 the condition of the asylum was a matter of public discussion; since in October, 1884, Dr. S. V. Clevenger, then pathologist of the Cook County Hospital for

* Testimony of Mrs. Phillips.

† Special Report of State Board of Charities, 1886.

the Insane, read a paper before the Chicago Medical Society, in which was embodied most of the facts already cited from the report of the Board of Charities. In consequence, the Chicago Medical Society and the Citizens' Association united in requesting the Illinois State Board of Charities to unite with them in investigating; but no action was taken, although the Chicago daily papers contained published interviews in which Drs. Howe*, Koller* and Kiernan,* of the Asylum, demonstrated the truth of Dr. Clevenger's statements, as well as did published recommendations of Dr. Kiernan to the Local Charities Committee. Scurvy was then present to a limited extent, but as Dr. Kiernan was unable to procure fresh vegetables a serious epidemic of scurvy occurred about February, involving about two hundred patients, all of whom were permanently injured by it, and several died from its indirect influence; in two cases death resulted from it. The character of the food during Dr. Kiernan's time is thus summed up by the State Board of Charities: County Commissioner Klehm considered that the fare was too meagre, that the supper especially was not sufficient, that the only full meal given was dinner, and that there was a lack of vegetables, to which he drew the attention of the warden and of the chairman of the committee. Dr. Alexander said that persons in health might support life on the food given, but it was poorly cooked, and, for insane people, unwholesome and insufficient in nutritive value. Dr. Kiernan had the same medical opinion of it, and made persistent but ineffectual efforts to have a proper diet list established. Commissioner Wasserman moved, in committee, December 12, 1884, that the list proposed by Dr. Kiernan be adopted, and the warden in-

* See particularly Chicago *Daily News*, Nov. 16, 1884; Chicago *Daily Tribune*, Nov. 29, 1884.

structed to see that it be conformed to by the cook; the motion carried, but nothing came of it. As to the quality of food, the bread was good; the coffee not to be distinguished from the tea. The cooking was bad, and the facilities for cooking, for the number of patients fed, were wholly insufficient; although thousands of dollars were being spent on a fence and a greenhouse, and repairing the officers' dining room. It is not possible to serve anything but a boiled dinner, which, in the quaint language of the assistant cook, is not properly cooked, but "coddled." The service was bad; there was a failure to distribute the food properly, so that some wards received too much and others not enough; the table furniture generally uninviting; in many wards tin plates and cups are used, and the ladies of the Women's Club had repeatedly seen them black and dirty; the conduct of the patients at their meals was disorderly; the attendants ate in the officers' dining-room in the center building. Pigs' heads were a frequent article of diet. Meat is furnished, under a contract, by a butcher (Bipper) whose bills for 1884, were $15,763.04, and for 1885 they were $18,934.11. They contain hogs' heads, charged and paid for at nine cents a pound, the price of good pork. The assistant cook had never seen joints of pork brought in for the patients, and when asked in what condition the heads were when brought to the kitchen, replied, emphatically, "brought into the kitchen a disgrace to the butcher who sent them." Asked to explain his meaning more fully, he said that the hair had not been properly scraped, when scalded, and that it was embedded in the skin so that it could not be removed by the knife nor by fire. Dr. Alexander said that they never were inviting—the bristles were very long. Dr. Howe had seen black dirt on the ears, which the cooks had not succeeded in boiling off. In June, 1885, a patient

found in her plate an iron-ringed, uncleaned catarrhal snout, which led to an investigation by the committee, and the snout and ring were exhibited to Commissioners Lynn and Van Pelt, in the warden's parlor Commissioner Van Pelt directed the discharge of the cook, but his order was disregarded.

As before, the State Board of Charities held aloof and did not even visit the institution, as the law requires, that year. Sept. 1, 1885, Dr. Kiernan's term expired. October 19, 1885, the condition of the Cook County Insane Hospital was once more brought before the Chicago public. Although the State Board of Charities was then in session in the city, no action was taken by it until upon the request of the leading journals, of the Chicago Woman's Club, of members of the Bar, of the Citizens' Association, and of the Chicago Medical Society, the Governor ordered the State Board of Charities to make an investigation. The result of that investigation was such that a strongly condemnatory report of the condition of the asylum was made. Although every charge made in the paper of Dr. Clevenger, read in 1884, was sustained, the Board claims that: "The results arrived at by us were mainly the results of the double-headed management in Dr. Kiernan's time; and it was an extraordinary sight to witness his willingness, at the risk of censure which ordinarily might be visited upon him personally, to reveal the defects and failures of his own administration. We give him credit for both courage and public spirit in the course pursued by him."

The question naturally arises, Is the cause assigned by the Board sufficient to account for the evils which have existed for the past two years in the Cook County Insane Hospital?

The Board says: "It was shown that political considera-

tions very largely governed the election of officers by the Board, and the appointment of employés by the officers; that instead of intrusting the government to the Superintendent, the Commissioners themselves spend an unnecessary amount of time at the hospital; that conflicts arise between the officers as to the limit of their respective powers; that there is much insubordination on the part of the employés; that the discipline is lax; that supplies, when needed, cannot be easily and speedily procured; that the patients suffer various inconveniences in consequence, and that it is often difficult, if not impossible, to estimate the responsibility of individuals for the evils which are seen and admitted to exist." But it admits that all these evils existed before the dual management was instituted, and a careful examination of the testimony cited in its report will show that nearly all the evils proven existed long before the dual management. If Dr. Kiernan was not afraid of censure in exposing the defects of his own administration, it is obvious that his evidence becomes of double value as to the condition of things he found in the institution, already cited from his evidence. The testimony of Mr. Hughes as to the treatment of typhoid fever cases by enforced labor by means of the camisole related wholly to the period before the dual management, as Mr. Hughes' connection with the institution ceased July, 1884, and the dual management began Sept. 1, 1884. The evidence of Mrs. Lowell related almost wholly to that period, and that of Mrs. Welker, Mrs. Heintz, Dr. and Mrs. Clevenger, Dr. Howe and Mrs. Shedd largely to that period. The Board itself uses the following language: "Under Dr. Spray the system of administering medicine was objectionable. Whisky and sedative mixtures were sent up

in large quantities marked "ward use," and considerable latitude allowed to the attendants in their administration. They then cite the evidence of Dr. Delia E. Howe, who says, after stating the therapeutic measures already mentioned as used by attendants: "It took some time to impress the idea that I preferred to be called before the ever-ready remedies were used. Evidently a physician had been a luxury and only called as a last resort. Attendants hired patients to work for them by giving whisky and sleeping medicine, which these patients had come to crave as opium-eaters opium. The amount of sleeping medicine and whisky used in the female wards alone was enormous. That both male and female attendants helped themselve quite largely from the ward whisky-bottle, which was filled whenever they desired, is beyond doubt." These practices were stopped by Dr. Kiernan, but resumed after September 1, 1885.

Dr. Koller once saw an attendant (who had been in the asylum six years) strike a patient in the face, because he would not go to dinner. A former patient (during 1883–84) saw a female attendant (six years in the asylum) kneel on a patient's stomach and try to pour a dose of medicine down her throat; at another time she saw an attendant (six years in the asylum) slap a patient, who had on a straight-jacket, in the face, because she persisted in calling for Dr. Spray; she also saw an attendant pull a patient out of the dining-room by the hair, slap her and strap her to a bench, for breaking a plate. The housekeeper, who compelled very sick women to do scrubbing, despite the Doctor's orders, had been in that position two years, and had been an attendant for three years before. It was in evidence that the superintendent, during 1883, himself had on more than one occasion struck female patients. It was in

evidence that drunkenness was common in the asylum during 1883–4; that some of the commissioners frequently visited it in an intoxicated state. The drug store at all times was a gin mill. The Board says: "The liquors at Dunning are kept in the drug-room, and dispensed with great freedom to visitors, officers, and even to employés. Intemperance on the part of the employés, in numerous instances, was clearly proved, among the rest, a male night-watch, an assistant engineer, and several attendants. Miss Lowell, 1883–4, had seen two female attendants intoxicated. Dr. Howe went into the drug-room one night, and found female attendants drinking beer there." And this during 1883–4. The Board of Charities itself states that the same condition of insufficient clothing existed in 1883–4 as in 1884–5. That scurvy existed during 1883–4, and everything already stated as to that period will be found in the report of the board for 1886. The Board says, concerning the system of government, that: "The county board, it is true, after electing as many officers as it may think expedient, turns the management of the asylum over to a committee; but the relations of this committee are very different from those of a board of trustees, since the members of the committee which has to account for the management are also members of the board to which the committee must account. As commissioners, they necessarily form a part of every combination, political or otherwise, in the larger body to which they belong, and their action as trustees or committeemen is controlled by the exigences which grow out of such combinations, rather than by a disinterested regard for the welfare of the inmates of the institution of which they have charge. What powers they do possess should, under the law, be exercised by the committee as a unit, and their acts should be made a matter of record; but they have no secretary, keep no records, and each

member of the committee assumes, or may assume, to exercise, individually, the power which in fact is vested only in the full committee, regularly convened. The county board is a changing body; it has no opportunity to inform itself as to the nature of insanity, the needs of the insane, the principles of organization, or the practical methods of work best adapted to the successful management of a public institution; experience has demonstrated that it does not even know what a public institution ought to cost for maintenance, nor how the items of expenditure should be apportioned. The county board is, of course, a political body; it is elected by popular vote, and it is only natural to conclude that the positions within its gift will be bestowed in part with a view to the political effect of such appointments upon the personal fortunes of the commissioners. How can it be otherwise? It is equally natural to suppose that those who have successfully labored to secure an election by the board will be more or less subservient to the wishes of the commissioners in making subordinate appointments." Yet this system was present during 1883–4.

It is well known in Chicago that in 1884 a political quarrel occurred in the dominant party; some few set up as reformers, and it was through these and certain actual reformers Dr. Kiernan was elected superintendent on medical recommendations, he being personally unknown to them. The real reforming element was at the time desirous of changing the management of the asylum. Two men, much respected for their personal integrity, Commissioners Senne and Klehm, although holding different political views from Dr. Kiernan, strongly supported him, then and thereafter. The attempts at reform of Dr. Kiernan soon drove the sham reformers and ring men into alliance, and the number of the anti-ring men was diminished by three, on account of

an election during Dr. Kiernan's term,—a lawyer of prominence being succeeded by a commissioner best known by his frequent arrests for brawling in saloons; whose character may be judged from what is already cited from the State Board of Charities' report concerning him. The Board, during 1883, was dominated by the gambler "Boss" already mentioned.

With the facts already mentioned in mind, it is obvious that the State Board of Charities was desirous to screen the administration during 1883-4. It could not have been for political reasons, for during 1883-5, the same *party* was theoretically dominant. It could not have been from a bias in Dr. Spray's favor alone, for the Board itself condemns his medical system, while it commends Dr. Kiernan for changing it. The reason is evident from its course during the investigation, which it limited to a period subsequent to the examination made by its accountant, in the summer of 1883, when it enforced the legal rules of evidence against Dr. Kiernan, who brought charges which it now admits were true, but failed to enforce those rules in his favor when it permitted the asylum managers to introduce rebuttal evidence in the midst of his direct evidence, and to then make mendacious attacks on his character, but refused to allow him to introduce any direct evidence after the rebuttal evidence of the accused, although it was well aware that it had rendered him no assistance in procuring witnesses,—a matter of difficulty without its aid. It refused at first to allow him legal aid, although the county attorney acted as counsel for the defense, and treated himself and his witnesses at first with severity. Reference to the law will show that the Board did not make any inspection of a legal character in 1883. That it failed to make even a pretense of an inspection in 1884 and

1885 is obvious from its own report. The facts discovered in 1885 might have been revealed in 1883, and much suffering saved the hapless inmates of the Cook County Hospital for the Insaneduring the two following years. With the request for an investigation made by Mr. Ambler, secretary of the joint Chicago Medical Society and Chicago Citizens' Association Committee on the Insane Asylum Abuses in 1884, in mind, it is difficult to understand why the Board, if desirous of doing its duty, should fail to comply with the law in that and the following year. "From an impartial examination of the above evidence, including the report of the Board named, I believe the following conclusions naturally follow: 1st. That at a time when the Cook County Asylum was regarded as a place where "ward workers" and certain female acquaintances of ward politicians were provided for under the pretext of serving as attendants, and its higher offices were filled by drunkards, gamblers and ex-concert saloon-keepers; when the unfortunate inmates were delivered over bound hand and foot, as it were, to the mercy of the most vile, filthy and brutal of their species; when for every dollar stolen *per diem* there was an insane patient shivering or dying for want of clothing; and when for every commissioner and employé who became intoxicated on asylum "supplies" there was a case of scurvy in the wards, the Illinois State Board of Charities commended the management in eulogistic terms, basing these laudations on an illegal inspection. 2nd. That when public indignation was aroused, when it became evident that the grand jury were periodically hoodwinked, when almost every issue of every newspaper throughout the land was filled with revolting details illustrating the mismanagement of the Cook County Asylum, and the Chicago Medical Society and Citizens' Association united in request-

ing the Illinois State Board of Charities to inspect matters, it did not even order a formal legal inspection. 3rd. That when a physician whose name is well known to European and American students of insanity, having been urged to attempt a reform of the Cook County Asylum supported by the best medical, legal and social elements of Chicago, was met at every step by organized opposition, and on one of several similar occasions almost fatally injured for venturing to interpose between a helpless lunatic and a brutal attendant crazed by drink, he received neither support nor encouragement from the Illinois State Board of Charities. 4th. That it was not until the Citizens' Association, Women's Club, a Chicago Bar Committee, the Medical Society, the editors of influential journals and leading citizens induced the Governor to order the State Board of Charities to do its duty, that it reluctantly proceeded to its performance. 5th. That the Illinois State Board of Charities in conducting the examination displayed a hostile feeling toward those who had pressed the examination, hampered the giving of evidence as to abuses, while favoring, indirectly, malicious and mendacious attacks upon private character of witnesses to such abuses. 6th. That the report confirming the existence of gross abuses which the State Board of Charities found itself compelled to make as a result of the investigation it had so reluctantly begun, convicts the above Board of having failed to perform its duties since its organization, and of being, therefore, directly and indirectly responsible for untold misery endured by the helpless thousands who had no other body to look to for relief, but who, during these years of mismanagement, plunder, cruelty and neglect, looked to this body in vain. 7th. That inasmuch as the Illinois State Board of Charities' report confesses to a condition of affairs from 1883 to 1886 which under the circum-

stances (as is proven by Dr. J. S. Jewell's earlier report) could have been but the consistent continuation of a similar state of affairs prior to 1883, this proves that its eulogistic report of that year must have been false in fact. 8th. That in view of this, the arbitrary limitation of the investigation by the Illinois State Board of Charities to the period subsequent to the report of 1883 was a manœuvre as to whose objects there cannot be a doubt in the mind of any reasoning person. 9th. That the State Board of Charities does not ensure the protection of its unfortunate wards, but, on the contrary, through its opposition to reform, when proceeding from sources not under its immediate control, its ignoring of well founded and well supported requests for investigation and remedial action, its encouragement of personal squabbles to the detriment of vital evidence, and its misleading reports, commending what it was instituted to expose and condemn, constitutes the best protection the asylum politician can desire, is to be regarded as the guardian of incompetency in the medical, of fraud in the financial and of brutality in the administrative management of insane and other asylums. 10th. That for the benefit of the insane of Illinois, a body more inclined to carry out the provisions of the act of 1869 is needed. 11th. That in all large states three State Commissioners in Lunacy, two of whom should be alienists and one a lawyer, should be given the duty of supervising the insane."

REPORT OF A CASE OF PELVIC HÆMATOCELE.

By W. W. GRANT, M. D., *of Davenport, Iowa.*

Miss B., twenty-four years old, resident of Tennessee. A lady of education, culture and refinement, of delicate physical organization. On February 7th, 1881, on the third day of menstruation, while in the act of lifting a bed to take a trunk from under it, she was taken with a sudden, intense, and she said, an indescribable pain, of a tearing nature, in the region of the pelvis, and fell to the floor in a condition of syncope. She was taken up and put to bed, and continued to suffer from pain, extreme weakness, pallor and vomiting for several hours. Professor Madden was sent for and administered several hypodermic injections of morphine before relief was obtained. The menses stopped suddenly, and hot applications were applied "to bring back the flow," as it usually continued a week. But it did not return until the next regular period, when it was profuse. The attack was followed by much pelvic tenderness, slight tympanites and pains, sometimes of a spasmodic character, until July, 1881. With the consent of her physician she went, in less than two weeks from the time of attack, to Florida in company with her father for the benefit of her health. She suffered much *en route*, but after reaching her destination and keeping quiet she soon commenced to improve. The improvement in health continued until January, 1882, when pain, though not as severe as formerly, and swelling returned. Notwithstanding this fact, she went, on the 14th of February, to an evening party, during menstruation, participated in the dance and went home suffering again quite severely, and remained in bed for six months. During this

time she was seen and treated by the well known surgeon, Professor Briggs. The case was regarded as one of pelvic cellulitis and peritonitis, with tendency to the formation of abscess, hæmorrhage never being suggested. The pain, tenderness and swelling diminished, but her general health gradually grew worse.

On 9th October, 1882, with the consent, if not advice, of her physician, Dr. Madden, she left Nashville on a second tour for the benefit of her health, her destination being Chicago and Davenport, where she had friends and relatives. The synopsis of her history was given to me by herself and family.

On October 28th, 1882, twenty months from the date of attack, I took charge of the case. The patient was suffering, though not greatly, from a feeling of discomfort, tension and heaviness in the hypogastrium, but most from a dull and unceasing pain in the lumbar and dorsal spine, which made her exceedingly restless, nervous and sleepless. From this condition she had at no time been entirely free. She rarely had a good night's rest. She was decidedly anæmic, and much emaciated. This condition with chilly sensations and slight febrile reaction occasionally in the evening suggested septicæmia. On examination I found a tumor which not only filled the pelvis on both sides but extended above the umbilicus, but with the patient on her back was most prominent in the right hypogastrium, in which locality she had suffered most pain from the beginning. On palpation the swelling was hard and unyielding. Even with the finger in vagina no fluctuation could be detected. The body of the uterus could not be defined, but the mouth and cervix rested on the floor of the perineum and was perfectly immov-

able, the os pointing up towards *ostium vaginæ.* To the finger in the vagina it was a hard, rather uniform swelling, the roof and surrounding parts as firm and unyielding as in severe peritonitis.

The beginning certainly indicated internal hæmorrhage. I determined to settle the nature and character of the case satisfactorily by aspiration, and if fluid was found, to evacuate it by this means at once. So I introduced the needle into the most prominent part of the swelling in the right hypogastrium. The appearance of a thick, tarry liquid—the first containing a good deal of pus—confirmed the belief of long-standing hæmatocele. With the patient in the recumbent position, only with head and shoulders slightly elevated by pillows, I continued the process of evacuation, only stopping to empty the bottle of the liquid, until, by accurate measurement, fifty-seven ounces had been withdrawn—the time being forty-five minutes. The patient now feeling faint I stopped the operation, hoping that the small quantity of the fluid left would be absorbed, and especially as the last seemed fresher and to contain no pus. The first pint of liquid contained much pus. The rest with the needle pushed to the depth of three inches seemed to contain none. The pain in the back, and every feeling of discomfort, was promptly relieved. She remained in bed two or three weeks, and improved steadily and rapidly. Menses appeared about the usual time of the month in November, and were more regular and natural than before. In December, contrary to instructions, the patient went to a party on a cold, stormy evening. The next day she commenced to suffer pain and a feeling of discomfort as before. An examination demonstrated that the sac was filling; sore on December 21st I again used the aspirator,

removing the entire contents, twenty-six ounces of decomposed blood, and treated as before, with rest, iodide of potassium, tonics, and an abundance of milk with a good quantity of solid food. The patient progressed satisfactorily, the menses appeared at usual time; were quite free, but irregular, the flow stopping and reappearing for a week, but not attended with much pain. Her general health demanded out-door life, and she was given its advantages, as after the previous operation. She improved, but not as rapidly and uninterruptedly as I expected. She suffered from sleeplessness, slight pelvic pain, and slight feeling of weight in the pelvis. In January, 1883, menses appeared and pursued a course similar to the December period. In February, about the middle of the month, the exact date, by oversight, not being recorded, examination satisfied me that the fluid was again accumulating, so I again evacuated, as in the second operation, the entire contents, amounting by aspiration to sixteen ounces. There was no evidence of pus. Without removing the needle, the point of entrance being about the same each time, I injected, taking particular pains to exclude air, two ounces of the following mixture: compound solution iodine, one ounce, pure carbolic acid, one drachm, to four ounces of water, and allowed it to remain. The object being to obliterate the sac by inflammation and contraction. The injection induced, quickly, severe pain. The wall of the sac contracted energetically around the needle, as was shown by the fact that its withdrawal required some force. The pain was promptly relieved by a single hypodermic injection of morphia and atropia. A subacute inflammation followed, such as we would expect in a mild pelvic cellulitis or peritonitis. The temperature, never before above 99° F., was now 100° F. every evening for a week, and 99° F. in the morning.

The patient was not permitted to get up for any purpose. Required no further opiates except a suppository containing 1 grain aqueous extract of opium and ½ grain of the extract of belladonna at night for one week, for the purpose of inducing sleep, and to quiet and relieve the moderate pain. There was at no time difficulty in urination. A Spanish fly blister was now applied to the hypogastrium. Iodide of potassium and bichloride of mercury in combination were given three times a day for one month, and quinine also for two or three weeks. Hot water vaginal douches were freely administered for several weeks, and an abdominal binder quite firmly applied. The patient progressed satisfactorily, without a recurrence of the hæmorrhage, to a complete restoration of health. She remained in my charge still for several months, and then went to her home in Tennessee, well and happy. I have communicated with her repeatedly since, and she has, up to the present time, continued to enjoy most excellent health, horse-back riding being one means of exercise and pleasure.

This case presents several features of more than ordinary interest. The occurrence of this form of hæmorrhage in a young, unmarried lady; that with the best medical and surgical talent in Nashville error in diagnosis was evident; the large size of the tumor—being without a parallel so far as I can learn—and then too, the slight pain from it, except when first attacked, and in the back as stated, notwithstanding the constant increase in quantity of effused blood and the pressure and distention induced by it. The latter was so great that rupture of the sac must have been imminent. In spite of this state of things, this was a walking patient up to the very day of examination and use of the aspirator. I am not aware of another case being treated by aspiration and medicated injection in this way. Bearing in mind its long standing,

that it was changing into an abscess, the immense size of the sac, the slight disturbance produced by the injection, and the steady and complete recovery, commends the plan of treatment worthy of a more extensive trial.

In the early stage hæmatocele does not demand operative interference. When the clot is not reabsorbed but liquefies, then its evacuation is required. There is a difference of opinion as to the best method of procedure. I believe aspiration deserves the preference, and especially in large effusions, because safer. It is more thoroughly antiseptic than any operation by incision can be. It does not expose a large surface to the action of the atmosphere, and suppuration is not likely to be established by it. When the contents are offensive or pus has formed, I should in the future, after evacuating the contents by aspiration, wash out the sac with warm water, and then inject iodine or carbolic acid, or both, and permit a certain quantity to remain, as in the case reported. I believe this was a case of extraperitoneal hæmatocele, commencing by a rupture of a vein beneath the right ovary, within the folds of the broad ligament, and that the hæmorrhage recurred with subsequent menstrual periods, dissecting the broad ligament and passing in front of the uterus, and to the left side.

223 Brady Street.

EDITORIAL.

THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The approaching meeting of the American Medical Association promises to be of unusual interest and importance. The Committee on Organization of the International Medical Congress, appointed by the Association, having performed its duty, is prepared to report to the Association the fact that the congress has been organized, and that the affairs of the congress are now in the hands of the Executive Committee, consisting of the general officers of the congress and the presidents of the different sections. The Association can then accept the report and discharge its committee. After that the Association can with propriety declare its official connection with the congress to be terminated, having discharged the duty which it was requested to undertake, in inviting the Congress and providing for its organization. By such action the Association can avoid any question of financial responsibility in connection with the congress if there should, unfortunately, prove to be a deficiency of funds subscribed for the expenses attending it. Such a course of action on the part of the Association will, no doubt, remove all occasion for further wrangling over the congress, and materially add to the scientific value of the meeting. It is stated that the papers to be read in the various sections are already numerous and evince an unusual degree of original research. This state of affairs is probably due to the

judicious selection of the chairmen and secretaries of the various sections. Medical politics played but an unimportant rôle in their election at New Orleans. To further conserve the interests of the profession, an amendment to the by-laws was offered by Dr. Foster Pratt, of Michigan, two years ago. The substance of the amendment is that each section shall nominate its Chairman and its Secretary—all other nominations to be made, as now, by the nominating committee. The actual workers in the sections are in a better position to determine the qualifications of their own presiding and recording officers than the nominating committee is.

All who were present at the New Orleans meeting last year, will remember with pleasure the scholarly address of the retiring PRESIDENT of the ASSOCIATION, DOCTOR CAMPBELL, of Georgia. One of the suggestions contained in this address referred to the creation of a new section, to be known as the Section on Medical Jurisprudence. Dr. I. N. Quimby, of New Jersey, embodied Dr. Campbell's suggestion in a proposed amendment to the by-laws. Every American medical practitioner is so thoroughly convinced, either through his own experience or that of his professional friends, of the vital importance of the subject, that Dr. Quimby's proposed amendment requires no discussion.

A letter over the signature "Branch", appeared in the columns of the *Journal of the American Medical Association*, February 6th, 1886, which invited attention to the desirability of making material changes in the plan of organization of the Association. It was proposed in this letter to adopt the plan of the British Medical Association, and divide our national society into a number of branches. Able letters upon the topic, by Dr. James H. Parkinson, of Sacramento, Dr. John B.

Hamilton, of Washington, Dr. J. M. Keller, of Hot Springs, and others, have appeared in subsequent issues of the *Journal*. The discussion is thus fairly inaugurated, and promises to be at least instructive. The editor of the *Journal*, in a timely and judicious editorial, appearing February 27th, 1886, mentions the fact that the same plan engaged the attention of the committee appointed by the National Medical Convention in 1846. After careful consideration of the subject, the committee reported the plan of organization, which, with some modifications, has endured to the present time. Now, without attempting to debate the question at the present time, we are under the impression that "an efficient and general organization of the profession" can "be founded on a proper application of the principle of *representation* from local organizations to state and from the state to the national as the union of the whole,"—the essential principle of the American Medical Association, as at present organized. We believe that this principle of organization is better adapted to the wants of the American Medical Association than a national organization, with a council self-constituted and capable of self-perpetuation, and a broader nominal membership,—the essential principle on which the British Medical Association is at present based. The subject is before the profession, and it is probable that it will command attention in the next meeting of the Association, which opens on the fourth day of May.

FOREIGN CORRESPONDENCE.

TO THE EDITORS OF THE *Chicago Medical Journal and Examiner.*

Messrs. Editors.—In addition to the new remedies that have lately attracted our attention, we have another which is worthy of mention. It has been extensively studied in France and in Italy by Dr. Pensato, who again called attention to it in a recent number of the *Riforma Medica.* This remedy has been known as methylbenzoil, acetobenzoil, methylacetone, phenylmethylcarbonile (Friedel), phenylmethylketone. But Dujardin-Beaumetz considering its physiological properties and the chemical group to which it belongs, named it hypnone. It was discovered by Friedel in 1857, and it is the type of a numerous class of mixed acetones, which are derived from two organic acids, one belonging to the series of the fatty acids, the other to that of the aromatic acids, from which the name of aromatic acetones given to this group of chemical bodies is derived.

Acetophenone is a mixed acetone derived by mixing ordinary acetone with benzophenone, and has for its formula CH_3CO, C_6H_5.

It is obtained by distillation (dry) from a mixture of acetate and benzoate of calcium, and when oxidized it changes into benzoic acid and carbonic acid. At ordinary temperatures hypnone is liquid, without color and of a persistent odor. Limousin has shown that it is not soluble in water or glycerine, but dissolves in alcohol, ether, chloroform, benzine, oil of turpentine and in essential oils.

From the researches of Dujardin-Beaumetz and others, it is known that physiological and toxic properties of hypnone differ very much in different animals. If fifty centigrams are injected under the skin of a guinea pig the animal will soon fall into a comatose condition and die in four to six hours. The rabbit is also very sensible to the action of hypnone; two grams do not kill the animal, but produce an insensibility at the point of injection. The temperature falls from 39.6° C. to 38° C., the urine smells strongly of hypnone, the animal will then fall into absolute inertia, but will be well again in twenty-four hours.

Laborde, Grasset, Dujardin-Beaumetz and Bordet have shown that three grams injected into a dog will have no effect, but if one or two cubic centigrams of hypnone is given by the stomach, a hypnotic action will follow. The hypnotic action is much increased if, according to Grasset, the remedy is introduced by intratracheal injections. A profound and lasting sleep will result without any danger to the animal. Intravenous injections will produce death; before dying there will occur a sound sleep, analgesia and anæsthesia, diminution of the vascular tension, and an irregular and interrupted respiration. In seventeen monkeys no hypnotic effect could be obtained, but instead a hypothermic action, at times slight and at times of many degrees, was observed. From all this evidence it will be seen that the drug acts on the nervous elements by diminishing the excitability, it lowers the vascular tension, and in toxic doses modifies the composition of the blood.

When given to a sound man in a dose of twenty or thirty centigrams in capsules united with sweet almond oil, the action is as follows: after a certain time, half to one hour, a calm and sound sleep is produced; the individual awakens without the headache, etc., which frequently occurs after a sleep pro-

duced by chloral and paraldehyde. The blood does not show any alteration, and the respiration and circulation are normal. Dubois has noticed that when an individual is under the effect of hypnone, he is much more easily brought under the influence of chloroform; a fact of much importance in surgical practice.

The main therapeutical indication of hypnone is to relieve insomnia. It is only beneficial in the so-called nervous insomnia, or in that produced by cerebral excitement, or by alcoholism, in which cases its action is far superior to all other hypnotics At a dose of twenty or forty centigrams, it produces a calm and sound sleep. It must not be given to individuals suffering with any cardiac affection. Dujardin-Beaumetz believes that hypnone is equal to chloral and paraldehyde. Somewhat inferior to chloral, for it does not possess any analgesic action, but superior to both because it provokes a calm sleep without disturbing the organism.

The best way to administer it is in capsules, each containing ten centigrams of the remedy dissolved in sweet almond oil. Dose, two to five capsules at once or at intervals of two to four hours.

A. LAGORIO.

CHIAVARI, Italy, February 24th, 1886.

SOCIETY REPORTS.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

LXIII Meeting, Friday, February 19th, 1886.

I.—JACKSON. *Laparotomy for Pelvic Abscess.*

II.—WAXHAM. *Description of a Feeding Bottle for Use in Cases of Intubation of the Larynx.*

The PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

I. PROFESSOR A. REEVES JACKSON, M.D., opened the adjourned discussion of the treatment of pelvic abscess by the presentation of the following paper, entitled,

LAPAROTOMY FOR PELVIC ABSCESS.

Owing to Professor Jackson's absence, the paper was read by the SECRETARY, EDWARD WARREN SAWYER, M. D.

At the December meeting of this SOCIETY, a discussion arose upon the subject of pelvic abscess and its treatment. It was based upon the report of a case by Dr. H. T. Byford, which had been treated by favoring discharge of the pus by way of the rectum, and the placing within the abscess cavity a portion of sulphate of copper to promote granulation.

The discussion seemed unfinished, and was withal of so interesting a character, that I have thought well to reopen it by the relation of the following case. Whether the operation performed in the treatment of the case should be termed a laparotomy will depend upon what significance we attach to the term. Upon this point opinions will doubtless differ.

If we understand by the word laparotomy, the opening of the abdominal cavity in its largest sense, the term is here correctly

used; but if, on the other hand, we mean the opening of the abdomen for the relief of *an encysted intraperitoneal abscess non-adherent to the abdominal wall*, the term would not be properly applicable, for here there was complete adhesion, and, possibly, in the course of time the abscess might have pointed and opened in that direction, although I do not believe that such result would have occurred. Without active interference I think the disease would have resulted in death from pyæmia in a very few days.

On March 9, 1885, I visited Anna N., in consultation with Dr. Louis Braun, of this city. She was twenty-four years old, had been married six years, and had one child eighteen months old. On February 1—five and a half weeks prior to my visit—she had miscarried, producing a fœtus four months old. A few days after that event, Dr. Braun found the patient suffering from symptoms of pelvic inflammation, which had since continued, with varying severity. He informed me that the pelvic swelling, which he detected on examination, appeared to involve all the periuterine structures, but to a greater extent on the right side; that during the past few days, however, it had seemed greater on the left side. From the onset of the attack the pulse had been rapid, and the temperature elevated—the former ranging from 110 to 130, and the latter being persistently over 102° F., reaching, on one occasion, 104° F. Pain had been severe, but controllable by morphia. The appetite had failed utterly and the stomach finally rejected all food.

At the time of my visit, the patient was pale, extremely emaciated, and her visage showed marks of prolonged suffering.

On examination, I found on the left side of and behind the uterus, a swelling as large as a medium-sized orange, with

rather indistinct outlines. Its lower portion was in a plane with, or somewhat below, the *os uteri*, and bimanually its upper margin could be felt extending above the fundus, which was pushed strongly to the right. Both uterus and tumor were immovable. The latter had a slightly elastic feeling in some places, although I was unable to detect any certain fluctuation through the vagina, rectum or hypogastrium. Through the posterior vaginal wall, at a point about an inch above the lower portion of the swelling, I fancied I received a sensation of bogginess, and this, taken in connection with the history of the case, gave me the belief that pus was present. Accordingly, I thrust a curved trocar and canula into the swelling by way of the vagina to the depth of about two inches, with no other result than the emission of a few drops of blood.

It was then concluded that the patient should have prolonged hot water vaginal douches daily, rectal feeding, and appropriate anodyne and tonic medicines.

On April 18,—five weeks later,—I saw the patient again, with Dr. Braun, who reported that after my former visit the symptoms had all become gradually ameliorated; the stomach resumed its functions, pain subsided, pulse and temperature became normal. No menstrual or other discharge had appeared. This improved condition had continued until two days before, when, without apparent cause, the patient had a chill, followed by rapid pulse, high temperature, pelvic pain and irritability of the bladder.

Under anæsthesia I examined the abdominal and pelvic organs. The pelvic swelling had undergone no marked change, except that it seemed to have increased in an upward direction, extending now to a point about an inch above the *symphysis pubis*. At this place I thought I detected obscure fluctuation. The swelling as felt *per vaginam* was hard at every

accessible point. All operative measures were declined by the patient and her friends, and the treatment advised consisted in the administration of morphia and quinine, and peptonized milk for diet.

April 19.—The patient was much worse. The pelvic pain was controlled only by large doses of morphia given hypodermically, and the stomach retained almost nothing. The pulse was 130, temperature 102° F. It was decided that laparotomy should be performed the following day.

April 20.—There were present as assistants Doctors Steele, Braun, Sterl, Dickerson and Mascheck. A spray of carbolized water had been kept playing in the room for several hours. The patient was etherized, and the bladder emptied by catheter. She was the thinnest person I ever saw placed upon an operating table. Immediately before the taking of ether her pulse was 124, temperature, 103° F.

The hair of the pubis was shaven off, and the skin of the abdomen washed with soap and carbolized water. An incision three inches long, ending below at the upper portion of the *mons veneris*, was made in the middle line of the hypogastrium. Deepening the cut, I came upon the peritoneum, which, however, could not be separated from the parts beneath. Proceeding inward through dense structures the knife suddenly entered an abscess cavity, which at once gave exit to a stream of pus to the amount of two or three ounces. Passing my finger through the opening, I found that the cavity extended downward, behind and to the left of the uterus, about three inches. The abscess walls proper could not be accurately defined. The inflammatory processes had matted together the upper part of the uterus, the left broad ligament, tube and ovary. The cavity was washed out, and a rubber drainage tube passed to the lower end, the outer portion the

tube being stitched to the edge of the wound at its lower extremity. The remainder of the wound was closed with sutures, and dressed in the usual manner.

The night following the operation the patient slept fairly well without an opiate.

When I saw her the next day she had taken milk and lime water with relish; her pulse was 108, and temperature 100⅘° F.

In brief, the relief of the symptoms was immediate, and the recovery uninterrupted. Pus continued to discharge for more than six weeks in constantly diminishing quantity. The tube was then removed. Menstruation appeared July 20th, and has been regular since. I examined the patient September 25th. The uterus was still in a position of right latero-version, but movable in a slight degree. The parts about the left broad ligament were thickened, and somewhat tender. An irregularly shaped mass occupied Douglas's space, and extended upward and to the left. The patient had gained greatly in weight, was ruddy, and doing her own housework.

In a letter dated December 29th, she states, "I have no pain, and feel better than I have for four or five years."

PROFESSOR JACKSON appended the following note from MR. LAWSON TAIT:

7 THE CRESCENT,
BIRMINGHAM, Jan. 4th, 1886.

My Dear Sir: I have performed now thirty-two operations for pelvic abscess, in every one of which a cure has resulted.

Yours very truly

LAWSON TAIT.

DISCUSSION.

PROFESSOR CHRISTIAN FENGER: Before entering into the discussion of the paper which has been read here this even-

ing, I wish to remark that I came here under the impression that the entire subject of suppurative, pelvic inflammation was to be dealt with; I now see the subject is limited to the treatment of pelvic abscess by laparotomy. The operation performed in Dr. Jackson's case I should not call a laparotomy at all, but simply an oncotomy. An abscess was opened, and the operation does not differ materially from the opening of a deep-seated abscess in any other region of the body—*e. g.*, in an extremity. As I understand the term laparotomy, and I am not aware that it is ever used otherwise, it means that section of the abdominal parietes is followed by an operation, performed within the peritoneal cavity. If the wall of an abscess situated in an abdominal organ has become adherent to the visceral surface of the abdominal parietes, the peritoneal cavity is of necessity obliterated to the extent to which adhesions have formed. An incision made over such adhesions does not open the peritoneal cavity, and consequently the operation cannot be spoken of as a laparotomy. In the paper which I published on "Laparotomy for Periuterine Abscess," it was distinctly stated that the only way by which it seemed possible to get at the abscess was by opening the peritoneal cavity; it is also mentioned that omentum and intestines were found between the walls of the abscess and the walls of the abdomen.

Concerning the etiology of pelvic abscess, I should like to call attention to the literature of the subject. Sänger,[1] whose statements regarding etiology I have found to be the most complete, says, that one out of nine of all gynæcological affections is of gonorrhœic character. He further says that fifty per centum of these are diseases of the uterine appendages; although, of course, any part of the genital tract may be primarily invaded. In the Fallopian tubes, he finds that

disease most often has its principal focus, where it begins and whence it spreads. He distinguishes six kinds of salpingitis: (1), septic, puerperal and non-puerperal; (2), tuberculous; (3), syphilitic; (4), actinomycotic; (5), gonorrhœic; (6), a mixed form. The gonorrhœic is the most common form of the disease, and it produces the most severe cases of pelvic inflammation.

It has not as yet been proven that the gonococci of Neisser can, of themselves, produce abscesses; but destruction of the surface of the mucous membrane is sufficient; an entrance is thus given to the septic, pus microbes, the *staphylococcus aureus* and *albus* and the *streptococcus pyogenes*, which are probably always present.

The invasion having taken place, we must ask ourselves by what channel does the inflammation travel? Where should we expect finally to find an abscess in case one should form? The Fellows will remember the beautiful experiments of Bitas, Koenig,[2] Schlesinger[3]; experiments which about three years ago I repeated in the dead-house of the Cook County Hospital, although the purpose I had in view at that time was a different one. These gentlemen injected, by means of fine canulæ, fluids, such as colored glue, into the periuterine tissues of puerperal and non-puerperal bodies. Koenig found (*a*) that fluids injected in the region around the *fundus uteri* and uterine portion of the Fallopian tubes, first pass upwards into the iliac fossa to reach the crest of the ilium, then downwards towards Poupart's ligament, and finally into the *pelvis minor* or true pelvis; (*b*) fluids injected into the periuterine tissues, in the neighborhood of the internal os, first fill the extraperitoneal connective tissue of the *pelvis minor*, then follow the round ligament as far as Poupart's ligament and ascend in a backward

direction into the iliac fossa; (*c*) that when the injection is made near the lower portion of the posterior surface of the uterus, the fluid first flows into the *cul de sac* of Douglas and thence rises into the iliac fossa.

Schlesinger, although in the main agreeing with Koenig, differs with him in the following two points: He says, (*a*) when fluid is injected into the neighborhood of the *fundus uteri*, it first passes into the iliac fossa, but thence it does not descend into the true pelvis, as Koenig observed, but it ascends, running up the anterior abdominal wall; (*b*) from the broad ligament the fluid finds its way into the iliac fossa and thence upwards towards the kidney, running in the mesentery of either the ascending or descending colon. Schlesinger further makes the interesting statement that his pericervical injections filled the pericervical tissues, but that they never produced a tumor which could be felt above the *symphysis pubis*.

As far as my experience goes, the results of these experiments correspond well with the clinical facts. The puerperal abscesses which I have opened were situated, two over the crest of the ilium, one on Poupart's ligament, and one on the anterior abdominal wall, about three inches above the ligament.

As before mentioned, about three years ago I made similar experiments; the fluid I employed was milk. My object, at the time, was to ascertain the exact relative position of such an artificial exudate, representing an abscess, with regard to the anterior wall of the abdomen, especially of an exudate in one of the broad ligaments. I wanted to see for myself what difficulties I must be prepared to encounter in uniting the walls of a pelvic abscess, after having opened it, to the edges of the abdominal wound. As might have been expected, I found the difficulties of the operation to vary partly with the size of

the exudate and partly with the degree of tension of the abdominal parietes. On the whole, the matter seemed simpler to me than I had *a priori* imagined.

Whether in cases of pelvic inflammations and abscesses laparotomy should be done or not, is a question of comparatively recent date, it being but little older than five years. As I have already said in my paper on "Periuterine Abscess," the operation is always to be regarded as a last resort and should never be thought of in cases in which the abscess can with safety be reached in any other way, which, of course, excludes opening it through the rectum. Lawson Tait,[4] of Birmingham, and Martin, of Berlin, were the first who attempted to prevent the terrible contingencies of pelvic inflammations by attacking the disease at its original seat; Lawson Tait[5] removed the suppurating uterine appendages, Martin[5] operated for suppurating, periuterine hæmatocele. Tait operated for a suppurating hæmatoma of the right Fallopian tube (peritonitis), in 1878, and he removed both tubes for pyosalpinx and an ovary for abscess in 1881. In 1881 Martin[6] performed laparotomy in three cases of intraperitoneal hæmatoma, *i. e.*, retrouterine hæmatocele. He opened the peritoneal cavity, incised the sac, and evacuated the blood and pus; he then drained into the vagina, through the pouch of Douglas, and closed the opening he had made into the sac from the peritoneal cavity by sutures. In the discussion following the reading of Martin's paper, Kaltenbach opposed Martin's operation, and pleaded for an extraperitoneal operation, reaching the abscess either from above Poupart's ligament, or, as Hegar recommended, from the ischio-rectal fossa. In 1880, Feldman,[7] of Goettingen, published an operation for double pyosalpinx. In 1882, Baumgaertner published a case of

hæmatocele in which Martin's operation had been successfully performed. These more or less sporadic operations called the attention of the profession to the subject, and already during the following year, 1883, upwards of fifty or sixty cases were reported, in which laparotomy was resorted to for the cure of pelvic inflammations. Aside from the forty-six cases which Lawson Tait published in his book, "Diseases of the Ovaries," he reported seven[8,9] more. T. Gaillard Thomas[10] reported five cases; Zeiss,[11] Thornton,[12] Baer,[13] and Proschownick,[14] each, one. In 1884, America was represented by fifteen cases; Stone,[15] 1; Lee,[16] 4; Lusk,[17] 1; Martin,[19] of Chicago, 1; Goodell,[20] 2; Jones,[21] 1; Thomas,[22] 1; Dawson,[23] 1; Polk,[24] 3. In England we have thirty-five cases; Tait,[25] 15, 7 of pelvic abscess; McDonald,[28] 2; Lediard,[29] 1: Chapman,[30] 1; Savage,[26] 9, 8 of pelvic peritonitis and 1 of hæmatocele; Malin,[27] 7.

In Germany, twenty-two cases were reported: Martin,[31] 8 of suppurating hæmatocele; Gusserow,[32] 7, in 4 of which the sac was stitched to the abdominal wound; Saenger,[33] 5; Schroeder,[34] 1; Quetsch,[18] 1.

It is evident that the operation rapidly gained ground, and that laparotomy has come to occupy a prominent place in the treatment of pelvic inflammations and abscesses. It may be objected that as yet the indications for the operation are not as clearly defined as we might wish them to be; in answer to this, we can only say that the operation is new and that we must consider the importance of the subject the guaranty of progress in the right direction.

I wish to add a few words about the subject, as it is modified, in cases in which the periuterine abscess communicates with the rectum or some other part of the intestines. My remarks will have reference to the discussion of my paper

on "Chronic Periuterine Abscess," the discussion of to-night being but a continuation of that broken off at our recent meeting for want of time. My paper was read before this Society in May, 1885. I will refer as well to the discussion of Dr. H. T. Byford's paper on "Pelvic Abscess," read here December 18, 1885.

When a communication exists between an abscess and the intestinal tract, evacuation of the pus into the bowel is sometimes followed by spontaneous recovery. As a rule, however, such a condition is extremely dangerous, for the abscess cavity is constantly being infected with septic material from the intestine. Péan in his *Diagnostique et Traitement des Tumeurs de L'abdomen et du Bassin*, T. II, p. 155, writes that a periuterine abscess may open into the cœcum, colon or rectum; that if a periuterine abscess opens into the intestine, bladder or uterus, septic infection will not fail to produce its symptoms and may speedily prove fatal. This statement may be a little too broad. Schroeder, in his *Krankheiten der Weiblichen Geschlechtsorgane*, Leipzig, 1880, says that when the abscess has broken into the gut or bladder we have to deal with a grave condition, as it is difficult or impossible to reach the abscess from the vagina. At that time, in 1880, he had not thought of the practicability of laparotomy in such cases. When the abscess has evacuated itself into the rectum, he considers it less difficult to get access to it, and he advises cutting through the posterior *cul de sac* of the vagina, and dissecting upwards between the uterus and the rectum. Emmet[39] writes that when an abscess opens into the rectum, the case is very much complicated by septic infection through the fæces. The quotations given are sufficient for us to conclude that, when there is communication between a periuterine abscess and the rectum, the patient is in great and constant

danger of dying from septic infection, and that, therefore, an operation should be done if possible to provide free drainage of the abscess. In discussing my paper, Professor W. H. Byford said that he was opposed to the line of treatment suggested by me, *i. e.*, laparotomy; that the *sphincter ani* should be dilated or incised, the communication between the abscess cavity and rectum should be dilated with the finger, a steel dilator or the knife, the cavity of the abscess scraped, washed out, and drainage effected *per rectum*

Aside from the old, now justly abandoned, puncture of a retrouterine abscess *per rectum*, Professor Byford's method of attacking such an abscess is to me entirely new. I have nowhere, in the course of my reading, met with a similar suggestion. If the abscess communicates with the intestine at a point beyond the rectum, a rectal operation is of course out of the question. If the opening into the rectum lies three inches or more above the anus, dilatation is hardly practicable. Such openings are often narrow and tortuous, the neighboring organs are immovable, and even if we divide the sphincter and the retrorectal tissues, we are obliged to work in the dark, for it is difficult or impossible to draw such an opening well down into view. The gentlemen present, who have extirpated a carcinoma of the rectum, will appreciate the difficulties of operating high up in the gut.

But above all, I must earnestly warn you against adopting Professor Byford's plan of employing in this region a knife for the purpose of dilating the opening of an abscess. Working here with a knife, we always run the risk of opening the peritoneal cavity and of dividing large vessels which are found in the wall of the sac. As I once demonstrated in the walls of an abscess, situated in a broad ligament. The

large uterine vessels may be found anywhere, and if wounded, it is next to impossible to ligature them securely.

In a relatively small number of cases the abscess breaks into the rectum near the anus; in these, dilatation may be tried, and it may even effect a cure, as we learn from Dr. H. T. Byford's case. However, we must have heard of more than one case before we can judge of the value of this method of treatment. Being somewhat enthusiastic over his rectal method, Dr. Byford disposes of laparotomy by saying, "The treatment by abdominal section cannot for a moment be entertained, for at least two reasons," of which the first one is that it is necessarily followed by a recto-abdominal fistula, which is incapable of being promptly cured, and is apt to become an unfailing source of systemic infection. Of the numerous examples we have, I need but mention the peri-typhlitic abscesses to show that an intestino-abdominal fistula does not contraindicate the evacuation of the abscess. We operate to save life, whatever may become of the fistula afterwards; besides, these fistulæ do frequently close. In the third case referred to in my paper, it closed in two months. The closure of a cœcal fistula is a common occurrence. The explanation is not far to seek. Whenever an abscess breaks into the gut, the condition of the abscess necessitates such an outlet for the pus. When the abscess is drained through a counter-opening in the abdominal wall or the vagina, and thus transformed into a fistula, the necessity for emptying its contents into the bowel no longer exists, the opening has become useless and it gradually contracts.

A fistula in itself is no source of infection. We never hear for example, of a primary local tuberculosis originating in a

fistulous tract. An anal fistula, when tuberculous, is always preceded by a local tuberculosis.

Dr. Byford, further on, criticises my cases in particular, remarking that to operate as does Lawson Tait, before the abscess has discharged, and then treat antiseptically, is an entirely different matter. All I have to say to this is, that the Doctor has entirely misunderstood Lawson Tait. A letter I had the pleasure of receiving from Mr. Tait one month after I had published my cases, begins, "I have just read your interesting articles in the *Annals of Surgery*." I shall now pass the letter around to the Fellows of the Society. In his second letter to me, Mr. Tait says, "Concerning your operations for pelvic abscess, I quite agree with you. Opening the abdomen is a very much more satisfactory way of dealing with these cases than any other." Dr. H. T. Byford's further remarks on my cases I shall pass by in silence, as I do not think their discussion is in order before the Chicago Gynæcological Society.

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PROFESSOR W. W. JAGGARD begged permission to submit an extract of a letter from Dr. Paul F. Mundé, received

about the fifteenth of February. Dr. Mundé's large experience in the treatment of pelvic abscess was well known to the Fellows of the Society.

Dr. Mundé writes: "I do not agree with Professor Byford's rectal treatment, as a rule, and certainly have not in my quite extensive experience found true laparotomy required to evacuate and drain a pelvic abscess. I mean opening the peritoneal cavity.

"Neither has my experience been that of Dr. Dudley, who says that the mortality, from abscess opening into the rectum, is great. I have seen only one case that I thought must die, in which there was a spontaneous rectal perforation."

DR. HENRY T. BYFORD: A few years ago Sir James Y. Simpson invented the operation of division of the cervix for uterine flexures. Almost all gynæcologists began performing it, and in a short time had done more harm than good with it. Only a few years since, Dr. T. A. Emmet invented the operation of trachelorrhaphy.

While justly maintaining that it is an exceedingly valuable operation in proper cases, he has recently stated that it may have done more harm than good. A short time ago, Lawson Tait invented a method of treating pelvic abscess by laparotomy, and surgeons are resorting to it with a certain degree of success. The method is undoubtedly gaining favor, and bids fair to be employed with disastrous frequency, and possibly do more harm than good.

In endeavoring to fix the limits of the usefulness of laparotomy for pelvic abscess, we must go beyond the recorded experience of the laparotomists, for the records are not yet

all in. I understand that Tait opens the abdominal cavity only in those cases which cannot be reached from below.

PROFESSOR FENGER remarked, parenthetically: He (Tait) does not operate through the rectum. He performs laparotomy when he cannot open through the vagina.

DR. BYFORD, continuing: Then we may say that abscesses like the one reported (which point above) should be opened by a simple incision, without entering the abdominal cavity; and those which point in the vagina should be opened and treated through the vagina. Now the question is, should those which point in the rectum be opened and treated through the rectum? What I claim is, that the procedure has not been thoroughly tested by the profession. As has already been stated in this SOCIETY by Dr. Wm. H. Byford, we can, by thoroughly stretching the sphincter of the anus, get into almost any abscess which is truly pelvic in its nature, and points, or opens, in the lower four or five inches of the rectum. We can dilate the opening, and then enlarge it with the fingers, without the use of any cutting instruments, against which objection has just been made. The danger of hæmorrhage from the wounding of blood-vessels is certainly very much less than the dangers in operating by laparotomy. There must be danger connected with any operation, but in the one I am speaking of it is reduced to the minimum. The entrance of fæces is of minor importance, for in the presence of perfect drainage and antiseptic irrigations, they do not remain in the cavity, and do not prevent it from filling in with granulations from the top and sides, and contracting and healing. Therefore dilatation *per rectum* should be first tried; and if any cases, after trial, cannot be thus successfully treated, laparotomy, or some other substitute, should be con-

sidered. Professor Fenger quotes, and then criticises, my arguments against laparotomy, without mentioning that I was only referring to abscesses that could be reached through the rectum. With regard to recto-abdominal fistulæ, I must still maintain that the abscess will close up and get well more readily with one opening into the rectum, properly made or enlarged, than if such a fistula exist in which the rectal outlet has not been enlarged. Gases and fæces will almost invariably pass through and keep the abdominal end of the fistula open, and will lodge in septic pockets, or sinuses, resulting from the inadequacy of the opening at the rectal end. If we close such a fistula above, we have the unfavorable conditions of the original abscess, and must still practice dilatation per rectum. Martin's method of instituting perfect drainage through the vagina, and then closing the abdominal opening, would undoubtedly be sound in principle, were it not that an operation through the vagina should take precedence when practicable; and when not, a single opening from above must be regarded as fulfilling the requirements, as is proved by the experience of Tait and others. Hence Martin's method must eventually be relegated to the exceptional procedures.

I do not wish the SOCIETY to understand that I do not believe in laparotomy for pelvic abscess, but that, being popular and new, it is apt to be resorted to unnecessarily and unjustifiably. The remarkable success of Tait should not be allowed to mislead us. His mastery of *technique* and fertility of resource, in abdominal surgery, justifies him in assuming risks which others may not.

PROFESSOR EDMUND ANDREWS: It seems to me that the usefulness of the operation in proper cases is reasonably cer-

tain, but that we must be careful not to incur the risks of laparotomy when safer methods are available.

It will broaden our views somewhat, if we recollect that an abscess in the cellular tissue about the uterus does not differ materially in nature, principles of treatment, nor results, from abscesses in the cellular tissue in other parts of the pelvis and abdomen. One set of laws governs them all, both in pathology and treatment. A point to be remembered is, that many cases recover spontaneously in early stages, contrary to the statements of some eminent men. A professional gynæcologist or surgeon, whose patients are attracted to him from long distances on account of his reputation, gets a class of cases, because of their long standing and obstinate character. He has to combat the same tendency to error of judgment in one respect which besets the mind of a pathologist, whose conclusions are too exclusively drawn from the dead-house; that is to say, neither of them sees the numerous cases which recover under ordinary treatment, and therefore do not come before them. Recoveries from abscesses in the cellular tissue in all parts of the abdomen and pelvis are common, though they are apt to be very slow.

I recall two cases, attended by well-known physicians in this city, which recovered from such abscesses after suffering about a year. These abscesses discharged through the rectum. I have, perhaps, been somewhat slow in the treatment of these cases. For example, a retrouterine abscess was brought to me from a distant state. It periodically discharged into the rectum above the reach of the finger. The patient arrived in Chicago in fair general health. Directly after her arrival, the discharges grew smaller in quantity, with longer intervals of time between, and she continued to progress in that way. Improving constantly in strength and activity, she began to make

excursions and long visits to friends in neighboring states, and, in short, enjoyed life so thoroughly that I deemed a laparotomy not justifiable so long as she progressed so well towards recovery without it. I presume she got tired of my dilatory plan. At any rate, after some months of improvement she ceased to report herself for periodic examination, and I lost sight of the case. I have a case now on hand in a more debilitated condition. She is confined to her bed the greater part of the time. I expected to operate many weeks ago, but soon after I took charge of the case she showed signs of improvement, which led me to postpone the laparotomy to see what would occur. The discharges, which were from a point high up in the rectum, grew less in quantity and further apart in time. The temperature went down to the normal standard and remained there, the tumor about the uterus diminished in size, and nearly two months have now elapsed since the last small discharge of pus. The patient's vigor is slowly returning. Under such conditions it is not certain that any pus cavity remains. I deem it my duty to wait until the presence of such a collection of pus is reasonably certain before subjecting the patient to the perils of laparotomy. Not long ago I had the opportunity to make a post-mortem examination in a case of circumuterine abscess. The abscess had formed several years ago, after a difficult parturition. I saw the patient in consultation a few times during the last weeks of life. The pus was discharged, partly by the rectum and partly through a fistula midway between the *symphysis pubis* and the umbilicus. She had been subjected twice to some surgical operation, whose exact nature I did not learn. The operations were not laparotomies. Having received no benefit, the patient was determined that no more surgery should be tried on her. After some weeks she died of asthenia, and I was allowed a limited

autopsy. The fistula above the pubes, after passing through the integuments, led downward and to the right, and at a point which seemed to be the right external inguinal ring it entered the inguinal canal and followed the round ligament into the pelvis. Here it became more spacious, but exceedingly crooked and complicated, winding irregularly backward until it opened into the upper part of the rectum. All the viscera in the vicinity were glued together in a mass by old inflammatory deposits. There was no large abscess cavity at any one point, but still there was a flattened pocket some three inches long, and an inch or more in width, lying behind the rectum in the hollow of the sacrum. It contained a little pus and fæces. This pocket might have been safely opened from below, working up outside the posterior surface of the rectum, had it been possible to ascertain its existence. I do not see how it could have been reached by laparotomy. The anterior fistula might have been benefited by freely slitting up the inguinal canal. I feel compelled to differ with my friend Dr. Henry T. Byford in one point. He suggests very naturally that Tait's operation, performed after the abscess cavity has opened into the rectum, would make a complete intestinal fistula, which it might be impossible to heal. This thought is natural, and I confess I would think the same thing myself, had not an extensive observation upon fæcal fistulæ shown me the reverse. Experience teaches that an abscess cavity opening into an intestine and filled with putrid pus and fæces, is very reluctant to heal so long as it is not freely drained and disinfected; but if it is widely opened, so as to make and maintain the shortest and straightest possible route from the opening in the cut to the external air, and if it be kept well cleansed and disinfected, fresh granulations will spring up, the orifice will contract and the fistula will heal, provided there is no stricture in the intes

tine below. This fact, or law, is very important, and applies equally to fæcal and urinary fistulæ, as I have verified by an abundant experience. A striking case in point occurs to me at this moment. An eminent physician on the South Side requested me to take charge of one of his patients, a lady who seemed to have an anomalous hernia, and was sinking under a suppurative discharge from the bowels. On examination I found her confined to bed, and rapidly approaching fatal exhaustion. There were several evacuations daily of mingled pus and fæces from the rectum. The left hip was found prominent over the whole gluteal region. The tumor fluctuated on palpation, was resonant on percussion, and gave a succussion on coughing. At times it gurgled under pressure. I opened it very slowly and carefully, fearing to find an intestine there. After passing through the atrophied *gluteus maximus*, I entered a broad cavity containing neither intestine nor omentum, but filled with pus and fæces. This cavity being emptied and washed out, was easily traced up to the sciatic notch, where it entered the pelvis by an orifice of moderate size. I now ripped the cavity open for nearly its whole length, and kept it cleansed. Vigorous granulations sprang up at once and the sac healed up rapidly and permanently. The patient seemed relieved of a great depressing influence, and rebounded at once toward health. She became plump and rosy, and rapidly regained her full strength.

II. PROFESSOR F. E. WAXHAM presented for examination a

FEEDING BOTTLE FOR USE IN CASES OF INTUBATION OF THE LARYNX.

The feeding bottle consists of an ordinary nursing flask, with a rubber cork, with a small vent through which a tube passes to the bottom of the bottle. To this tube is attached another leading to the bulb of a Davidson's syringe, and this in turn

is attached to a small-sized œsophageal tube. In using this apparatus the gag is placed between the jaws, the tube introduced into the œsophagus, and the contents of the bottle quickly introduced by means of the bulb.

Many patients, especially young infants, do not take sufficient nourishment after intubation has been performed, on account of the coughing produced by the trickling of the liquid into the trachea. This apparatus obviates the difficulty.

W. W. JAGGARD, M.D., *Editor.*

2330 Indiana avenue, 15th March, 1886.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 1st, 1886.—THE PRESIDENT, C. T. PARKES, M. D., in the chair.

DR. J. SUYDAM KNOX read a paper entitled

QUINSY AS A RHEUMATISM.

The author reported the treatment of fifty cases of the disease. In forty-nine cases (95 per cent.) there was a positive rheumatic diathesis. Forty of these cases recovered in thirty-six to seventy-two hours, without suppuration. The treatment was salicylate of sodium, and hot alkaline gargles, or the repeated insufflation on the tonsils of bicarbonate of soda. Five cases, decidedly rheumatic, were not benefited by similar treatment. Five cases, not rheumatic, were not benefited, and at the end of forty-eight hours the ordinary treatment of quinsy was followed. Only one of these cases did not suppurate. Doctor Knox concludes that in a large majority of cases quinsy is a rheumatic inflammation, for the following reasons: 1. From the percentage observed.

2. From the success of anti-rheumatic treatment. 3. From the similarity between the symptoms of quinsy and rheumatism.

DR. KNOX said that wherever possible he used an insufflator and blew bicarbonate of soda directly on the tonsils, using as much as 30 grains, and allowing it to remain as long as possible, to be followed by a gargle of water as hot as could be borne and to be continued until the throat was cleared, which would be from half an hour to two hours. He sometimes used carbolized lime water with morphia.

He stated that he could not say as to every case, but where suppuration takes place it is usually in the gland, an abscess is formed from glandular inflammation and suppuration takes place through the gland.

DR. A. B. STRONG reported

A CASE OF INTUBATION OF THE LARYNX FOR ACUTE CATARRHAL LARYNGITIS, WITH RECOVERY.

The patient was a child, aged two and a half years, delicate and small for her age. She had been sick thirty-six hours when it was decided that intubation was imperatively demanded, and it was done. Instant relief was obtained. The act of introducing a No. 3 tube had caused such an abundant ejection of mucus, and the breathing was so easy, that the tube was withdrawn, and the child passed the night comfortably. However, at 4 P. M. of the succeeding day the tube was re-introduced with the same success, but about twelve hours after the child caught hold of the thread and withdrew the tube. The No. 2 tube was then placed in position and remained there sixty-eight hours, when recovery was complete. Dr. Strong said intubing the larynx has advantages over tracheotomy in being quickly performed,

furnishing instant relief without cutting or bloodshed, being free from danger, and is readily assented to by the parents. The care of the patient after operation is slight, as compared with tracheotomy, as the tube does not have to be interfered with, nor does it often clog up. The tubes as now made, those of Dr. O'Dwyer, are not easily coughed out. It is easier to introduce than to remove the tube, owing to the fact that if the thread is left in the mouth it causes coughing and difficulty in swallowing. It was observed that during the thirteen hours the child wore the tube with the thread she had more difficulty in swallowing than subsequently when the thread was withdrawn; the thread being drawn across the epiglottis probably interferes with it closing the glottis during deglutition. Besides, the thread requires constant watching lest the child grasp it and withdraw the tube. Still in case a mass of mucus should lodge against the lower end of the tube and stop respiration, the thread might be the means of saving the child's life by allowing the tube to be speedily withdrawn.

THE PRESIDENT said it was a matter of surprise to him that so small an opening would allow the exit of secretions, as in the case just reported. It had been his experience that recovery always follows cases of catarrhal laryngitis. However, in these cases, he thought the introduction of the tube might be of great benefit in relieving difficult breathing or dyspnœa, and in allaying the fears of friends. He was aware that a very small opening gave air sufficient for inspiration for some hours. He once operated on a boy about 5 years old in whom the trachea by improper manipulation was turned in some way, and the incision made in the side of the trachea. When the external tracheotomy tube was introduced into the

wound the child breathed quite well, the suffusion of the face passed away and the lips became red, but still the sound of the breathing was not satisfactory to the ear. He then tried to introduce the internal tube and found the child had a return of all the symptoms of suffocation. On removing the external tube at the bottom of the wound the trachea was seen unopened. The child recovered. The President said that while the tube was in this bad position he looked into it through the fenestra, and at the bottom of the fenestra was an opening through which the smallest probe could be introduced into the trachea, which enabled the child to inspire air enough to relieve the urgent symptoms. He thought that in a case of true diphtheritic laryngitis an opening of the size of the tube under discussion could not, in his opinion, give exit to any such amount of secretion as is frequently seen during an operation. He did not think that intubation of the larynx would take the place of tracheotomy: it no doubt is of great benefit in those cases where the patient is likely to die unless some measure be quickly adopted which will give time enough to allow the operation of tracheotomy. In the case under discussion the tube was worn sixty-eight hours continuously. He had not seen a case of tracheotomy where the closure of the fenestra gave evidence that the trouble with the larynx or glottis was overcome in less than six days. This was the shortest time in which he had been able to remove the tracheotomy tube.

PROFESSOR F. E. WAXHAM said that from his experience with intubation of the larynx he was thoroughly convinced of its utility, and its superiority over tracheotomy. He had eight recoveries out of his first seventeen cases, a result which he claimed could not be approched by tracheotomy, especially in Chicago. The ages of the patients varied from eleven

months to five years; he considered these eight cases as being saved from certain death, as in only one case would tracheotomy have been permitted by the friends, and he had the corroborative evidence of other physicians as to the impending danger, and the urgent necessity of surgical interference. Since his last report he had had a number of cases, and had performed the operation four times during the last week, one patient being only eleven months old, suffering from both laryngeal and pharyngeal diphtheria; the urgent symptoms were at once relieved. In another case, age eighteen months, where death was impending, the tube was introduced without difficulty and the child relieved, and recovery would without doubt have been the result had not the child died of pneumonia on the second day. In another case, one of malignant diphtheria in a child of two years, the patient succumbed on the second day after the operation. In another case he found the patient cold and livid, pulseless, and unconscious. After the tube was introduced cold water was dashed on the child's face, and in about five minutes he looked around and asked for his father; took some milk and passed into a quiet sleep. This child died from pneumonia three hours later. Professor Waxham said that in the eight cases that recovered, in every instance false membrane was observed; when the tube was introduced the membrane was ejected, either in large flakes or broken-down masses. He recommended that in treatment after intubation nothing at all irritating should be given, as when a child takes fluid of any kind a few drops will trickle into the trachea and cause violent coughing, and this irritation will often lead to pneumonia. In a child rugged and strong bi-chloride of mercury may be given to hasten disintegration of false membrane. The most remarkable case which had come under his observation was a child of four years old that

was on the verge of suffocation, when, upon the tube being introduced, a considerable portion of false membrane was thrown out through the tube and the violent symptoms subsided at once. The thread was removed, and on the second day after the operation the child was playing about the room and continued about the house during the four days that the tube was worn, and finally made a perfect recovery. Professor Waxham thought that in regard to the comparative value of tracheotomy and intubation very much might be said. The text-books give as the percentage of recoveries from tracheotomy about one in three, but these statistics are made up from the most favorable reports. If a physician has one recovery out of three or four cases he is justly proud of it and reports the case; on the other hand, if there is one recovery out of fifteen or twenty cases, probably no report is made. He had known one physician to have operated fifty times with but two recoveries. He thought that the thread should always be removed, as it is a constant cause of irritation, and that no difficulty need be experienced in removing the tube with extractors. He thought intubation had a grand future.

PROFESSOR E. FLETCHER INGALS did not take an enthusiastic view of intubation, except for young children, when he thought it would be found more satisfactory than tracheotomy. In very young children tracheotomy does not result well, and he thought intubation would be unsatisfactory in older ones until we have larger tubes. He stated the accepted opinion of surgeons to be that a tube of less than one-fourth of an inch in diameter cannot furnish sufficient air for a child to live on. He thought that Dr. Waxham had been remarkably successful with intubation, and had demonstrated its utility, for which he deserved credit. He thought that intubation of the larynx is preferable to tracheotomy in children less than three and

a half years of age; children much older than this cannot get a sufficient amount of air through the tube now in use. He said, also, that in performing one operation he had had trouble with the gag, which was not large enough for the child, a boy of five years, who lifted his teeth from the gag and closed them on the doctor's finger. He thought there was no need of the thread remaining, as there could be little difficulty in removing the tube. He thought, that in cases where it is difficult to get the consent of friends, or where the conditions are such that tracheotomy cannot be performed immediately, intubation would be of value; there are cases not membranous in which intubation may be of value. The statistics looked unfavorable for tracheotomy, but he had seen statistics of fifteen or sixteen cases where half of them were recoveries. His success had not been quite so good, but he attributed this mainly to the fact that he had operated on five children who were almost dead, or at least had stopped breathing before the operation began. He had the good fortune once to save a child who had not breathed for what seemed to him twenty minutes. One of the strong points in favor of intubation is that it may be done early, and it does no harm even if unnecessary.

DR. H. T. BYFORD said there was another way of drawing the line which would more accurately describe the usefulnes of the two operations. Intubation seemed to him the operation for private practice, and statistics so far are comparatively favorable to it as such. But the co-operation of the patient's friends, the preparation of the inspired air by passage through natural channels, the freedom of intubation from grave responsibility, its bloodlessness, the simplicity of treatment afterwards, as well as the greater rapidity with which the mucous membrane around the vocal cords will get well, are conditions

which have less bearing in hospital practice, where we have trained nurses and all modern appliances, and there is more hope of success in tracheotomy. While he did not think this latter operation favorable for private practice, such advantages as having the tube under the eye, and within reach of the fingers of an attendant, the ease of local medication, the possibility of removing shreds of membrane and plugs of mucus, and of inspecting the parts by removing the tube and the longer time the tube can be retained, these are things that do not pertain to intubation, and which, in hospital practice, must secure for it some consideration. He said that there was one clinical fact that had not been mentioned in this connection, yet which, more than all other things put together, accounts for the success of intubation and the failure of tracheotomy as life-saving measures: in the one the patient can cough; in the other he cannot. After intubation the patient can normally close the glottis, compress the inclosed air in the lungs, and with sudden explosive force expel everything that is sufficiently loosened. This accounts for the fact that with such a small tube the patient experiences no difficulty. After tracheotomy the patient has no means of compressing the air and expelling it with sudden explosive force; he can simply inspire and expire forcibly and after exhausting efforts get rid of a little of the mucus. This desperate condition of affairs has led some surgeons to employ the dangerous and barbarous custom of introducing feathers and other irritants into the tube to stimulate the mucous membrane, which excites the patient and scatters the mucus both upwards and downwards. When somebody invents an appliance which will enable the patient to really cough through the tube,

then tracheotomy will be placed upon a rational basis, and will stand some chance of becoming a useful operation. He thought tracheotomy had made a poor showing for its years of trial.

PROFESSOR G. C. PAOLI said that malignant diphtheria is a morbid poison, and that in epidemic cases there are very few recoveries. He stated that in such cases exudation takes place in the larynx or pharynx, and that an operation would only result in sending the patient more quickly to another world.

PROFESSOR W. E. QUINE said that he had operated twelve times for tracheotomy and had not had one recovery in diphtheritic cases. He knew he was not alone in an experience of unvarying failure in cases of this kind; and he knew some surgeons now regard tracheotomy with very little enthusiasm. It seemed to him unfair to place intubation of the larynx in contrast with tracheotomy upon the basis of the assumption that tracheotomy is always a *dernier resort*, that it is done when the patient is absolutely moribund, and that intubation is done under more favorable circumstances. This is not the fact. He said he was personally cognizant of two of Professor Waxham's cases in which the patients were *in extremis*, and in which death would undoubtedly have occurred in two or three hours had not relief been afforded. Surgeons rarely had occasion to perform tracheotomy under more discouraging circumstances.

DR. J. J. M. ANGEAR said he wished to call attention to a physiological and anatomical fact that had not been alluded to, viz.: that the arytenoid cartilages are not mature and that the chink of the glottis is held open by positive muscular action in small children, whereas in adults and older persons

the arytenoid cartilages are mature and the chink is never closed. Dr. Angear said that a large number of children who suffocate will suffocate when there is no membrane present to cause suffocation, but simply some diseased condition that has interfered with the action of the delicate little muscles that draw back the arytenoid cartilages. When inflammatory action has interfered with these muscles drawing back the arytenoid cartilages, some mechanical interference like this tube will assist these muscles to keep the chink of the glottis open and let in air. He thought a large number of children who died of diphtheria did not choke to death, but died of poison in the system, and he did not think either the tube or tracheotomy, or any process, could save them. If there was interference with the opening of the chink of the glottis he had no doubt the introduction of the tube would save the life of the child.

PROF. J. S. KNOX said that the curse of tracheotomy is in the subsequent thoracic complications, either heart-clots or congestion and inflammation of the lungs, producing fatal results, and the reason probably is that tracheotomy is the final resort in cases of laryngeal obstruction. He thought that if tracheotomy were performed as early as intubation, there would be fifty per cent. of recoveries. The great advantage of intubation is that it can be performed early, and the early operation of intubation would no doubt save many a life that tracheotomy would not save if performed late. He thought that tracheotomy if performed as early as intubation would show as good results.

THE PRESIDENT said that he did not intend to say anything against the practice of intubation, but he did not believe it would take the place of tracheotomy. Intubation has had

but a very short trial, and it is not yet time to pronounce it to be better than tracheotomy. The early experience of the President in tracheotomy had been almost the same as that of Dr. Waxham in intubation. In the first fifteen cases operated on but half of them recovered, and his later experience was better than that reported by Dr. Waxham, as within the last month he had had three cases of tracheotomy, all recoveries, while Dr. Waxham reports four cases of intubation, all fatal. So far as his own personal experience went, he thought tracheotomy had the advantage. He thought that if he should put a tube in a child's throat for the relief of laryngitis and the child died without his having performed tracheotomy, he should consider himself very much to blame. He had no doubt that cases of extreme diphtheritic laryngitis got well after tracheotomy; he had seen diphtheria of the pharynx and of the larynx recover after tracheotomy. Although he did not feel enthusiastic about intubation he thought it had a very good place and in many cases might be very useful, but that it could never supplant tracheotomy.

PROFESSOR WAXHAM said he had never found the tube occluded when it was removed. In one case when he introduced the tube a portion of the membrane was crowded down ahead of it, obstructing it entirely, and the tube was ejected and was then completely filled with membrane; the child recovered subsequently. On removing the tube on the fourth or fifth day he did not find it occluded.

DR. A. B. STRONG said, in conclusion, that he had had some experience with tracheotomy, having had twelve cases with but one recovery. He had no doubt that in cases of diphtheria the membrane could come up through the opening. The case which he had just reported was reported

as spasmodic croup, and was not supposed to be one of false membrane, but he believed the child would have died without interference, and that belief was shared by Dr. Danforth, the attending physician. Dr. Strong said that he would hardly feel safe in leaving the tube in the trachea of a child without the thread. He agreed with the President that large pieces of membrane could not readily pass through such a long tube. In the case reported the tube was entirely free from membrane or pus when taken out.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 15th, 1886. The President, C. T. PARKES, M.D., in the chair.

Dr. WILLIAM T. BELFIELD gave a brief outline of SEVEN CASES OF DIGITAL EXPLORATION OF THE BLADDER IN THE MALE, as follows:

CASE 1.—A patient, 58 years old, who had been treated for several years, by various physicians, for cystitis and prostatic enlargement; complete retention had occurred several times. A diagnosis of villous tumor of the prostate was made, the nature of the growth being predicated upon the semi-gelatinous state which the urine presented after standing for a few minutes—an almost pathognomonic symptom when present. Exploration revealed a small villous growth just to the left of the urethral orifice in the bladder; and embedded in its meshes were found two stones, as large as a pea and a bean respectively, whose existence had not been suspected. Patient made a rapid recovery, and was entirely free from his old complaint three months afterwards.

CASE 2.—A boy, 17 years old, had for two years suffered

from frequent and painful urination, during which time considerable pus was constantly present in the urine. A probable diagnosis of tuberculosis of the urinary tract was made, and was confirmed some time afterward by the discovery of the characteristic bacilli in the urinary pus. At the urgent request of the parent the bladder was explored, with negative result. Some months afterwards nodular enlargement of the prostate and epididymis were developed. Patient's symptoms unimproved by the operation.

CASE 3.—A man, 63 years old, in the last stages of chronic cystitis, was admitted to the County Hospital. Had been treated for enlarged prostate. No enlargement of this gland could be recognized, but there was found, upon rectal examination, a collection of calculi occupying the exact site of the left seminal vesicle. Upon exploration of the bladder it was found that these calculi were contained, not in the vesicle, but in a diverticulum of the bladder, where they were completely encysted and covered with mucous membrane. This covering was torn and seventeen stones were removed. The patient's condition was much improved for two weeks after the operation, but at the end of six weeks he died.

CASE 4.—A man, 38 years old, suffering from all the symptoms of an extremely tight stricture of the deep urethra. No stricture could be found. Upon exploration of the bladder there was discovered a pedicled cyst attached to the upper orifice of the urethral opening, and completely occluding the urethra like a valve ; the tumor appeared to be as large as a small walnut. During an attempt at removal with forceps the cyst collapsed, about half an ounce of clear fluid escaping. The patient recovered rapidly, and has since remained quite free from urinary irregularities. This appears to be the first recorded instance of simple cyst in the male bladder.

CASE 5.—A patient, 38 years old, admitted to the hospital in a typhoid condition, suffering from cystopyelitis for which no cause was discovered. Exploration of the bladder showed nothing abnormal. The cystitis and pyelitis subsided completely. When patient was able to leave the hospital, it was discovered that he was suffering from an incipient myelitis.

CASE 6.—A man, 31 years old, admitted to the hospital with violent and fetid cystitis. It was found impossible to pass any instrument over a prostatic obstruction into the bladder; from the rectum the prostate was found irregularly enlarged. Upon exploration of the bladder, a malignant tumor, involving the prostate and a large part of the bladder wall, was discovered. Complete anuria ensued, and death from uræmia on the fourth day. At the autopsy, hydronephrosis of the left kidney, caused by a pipe-stem calculus of the ureter, was discovered.

CASE 7.—A man, 59 years old, was admitted to the hospital for a chronic cystitis of fifteen years' standing, caused by prostatic enlargement. Perineal incision was made for temporary relief. Three weeks later a portion of the obstructing prostate was removed through the perineal wound by the galvano-cautery. Complete recovery. The patient, who had for two years been practically unable to urinate except through a catheter, now passed water freely without assistance; the cystitis subsided. Nine months afterwards, acute uræmia and death. At the autopsy, small cirrhotic kidneys were found. This is believed to be the first case recorded in which a considerable portion of the hypertrophied prostate has been deliberately and intentionally removed.

On concluding his paper DR. BELFIELD spoke of a case which came into the hospital in a state of extreme exhaustion, evidencing violent cystitis. Urine containing pus was

passed every fifteen minutes with extreme pain. It was impossible to get an instrument into the bladder more than half an inch. The man was half unconscious and could give no history, but by rectal examination it was discovered that the prostate was very much enlarged in the left lobe, the right lobe appearing normal in consistency and size. Dr. Belfield thought this almost a proof that in a man of this age, 31, the seeds of tuberculous disease were present. The bladder was opened and the finger inserted in the usual way, discovering a malignant growth covering an inch and a half of the left wall of the bladder. After the operation the patient passed half an ounce of urine, but died in three days from uræmia. The bladder and kidneys were secured and found to be the seat of extensive hyperinosis, caused by a calculus. Another case was that of an emaciated French Canadian who had had trouble for eighteen years, and had depended entirely for urination upon the catheter for two years. The usual perineal incision was made, and a portion of the prostate removed. The operation was successful and the man was able to do without the catheter, although Dr. Belfield advised its use once a day. In June he had a slight attack of cystitis, due to the fact that he had persisted in ignoring the advice in regard to the use of the catheter. About the 10th of September he was taken with uræmic convulsions, and died on the 18th. The last few days the urine became cloudy again. The bladder and kidneys were secured, and a channel found in the prostate large enough to admit the forefinger. Dr. Belfield thought it would have been better to have cut down from above in the hope of relieving the prostatic tumor.

PROFESSOR E. ANDREWS suggested to the members

that this subject was more important than was formerly supposed. The former examinations made in these cases were very imperfect, and though the finger used occasionally to be put in the bladder, it was not dreamed that the whole circumference of it could be reached. He thought it should be impressed upon the members of the profession that the bladder can and ought to be explored.

THE PRESIDENT thought this procedure for diseases of the bladder so new that it might be called novel, and it seemed singular that at so late a day the bladder should be explored in this way, when surgeons have so long known that the bladder could be opened in many ways without injury to the patient. He thought the profession greatly indebted to Dr. Belfield for his remarks.

DR. W. L. AXFORD thought an incision in the perineum might facilitate a cure in cases of fistula, which at present are very difficult to cure, but did not know that it had ever been tried. We do know that renal fistulæ are very difficult to cure, probably because the urine is continually running over them. The procedure is practically harmless and may effect a cure.

DR. W. T. BELFIELD said in conclusion that this procedure of inserting a drainage tube through the perineal wound for curing fistula of the urethra is mentioned in Harris's book, and seems to work with entire success. There was one point upon which he congratulated himself, viz., the discovery of cyst of the bladder. So far as he knew, nothing of the kind had been recorded in either the pathological or clinical literature of the bladder. The misery that it can cause is illustrated in the case under discussion, and from its nature it offers every hope of a cure.

DR. W. L. AXFORD read a paper on

NOTES ON GENITO-URINARY SURGERY,

in which he said that he believed gleet is due to a stricture of the urethra, and can be cured by curing the stricture. He believed that dilatation cured a stricture by exciting inflammation at the seat of the stricture, and thus causing the absorption of the exudate. In the treatment of strictures he believed that perineal section is best in strictures which are deep-seated, narrow, or unyielding, or complicated by fistula or urinary infiltration; internal urethrotomy in all strictures of the meatus or fossa navicularis, for they will not stretch. For other strictures he would advise, as the case demanded, dilatation, divulsion, or internal urethrotomy. If the stricture is resilient, divulsion or internal urethrotomy, preferably the latter. He believed the dull pain in the back, and at times in the head, during the later stages of gonorrhœa, to be due to urethral reflexes. Cure the gonorrhœa or stricture and these disappear.

He cited cases in which severe cephalalgia and skin diseases had been cured by curing strictures by internal urethrotomy. Also, cases in which dysuria and vesical discomfort had been allayed by slitting the meatus. In female urinary troubles, after excluding uterine disease, he had given relief by digital dilatation of the urethra.

PROFESSOR E. ANDREWS referred to the point whether there is any danger or not in urethrotomy. European statistics show a considerable amount of danger in operations for stricture. He did not know the reason for mortality in Europe, for he thought it the general experience in Chicago that men don't die of these operations. Long ago he had left off keeping count of the cases he had operated on, and could not

recall an instance in his own practice or that of any one else in this city in which the patient died in consequence of the operation for stricture. As to the question of divulsion or cutting, he had performed the two operations indiscriminately, sometimes both on the same patient. He thought divulsion and cutting produce precisely the same result. Some strictures will stretch out under the divulsor and go back again, and cutting is better for these cases, but neither appears to be dangerous. He had found divulsors from New York instrument-makers repeatedly breaking down under strong strictures. Otis's instrument he thought exceedingly strong, but even that had failed in one instance. He expressed the belief that divulsion, thoroughly carried out, is as safe as cutting.

PROFESSOR F. E. WAXHAM referred to a unique case coming under his care of stricture in a child aged four years. He was convinced, however, that stricture is very rare among children. This was the only case that had come under his observation. Otis alludes to two causes—masturbation and gonorrhœa. In this case he found no history of gonorrhœa, and the mother denied the practice of masturbation. The child was put under the influence of ether; the stricture was so closed that he could only enter the bladder by means of a very fine bougie; this was followed by a larger one, this by a small catheter, and this by a steel sound, and the child was then able to pass the urine without difficulty. Before dilatation the child would undergo the greatest suffering every time he passed water, would scream and strain for several minutes, and oftentimes strain so severely as to cause evacuation of the bowels. After the firs dilatation the child did nicely for a week and then was as bad as ever; the second dilatation was three weeks ago, and there has been no further trouble.

DR. A. B. STRONG asked if the cure was permanent after

cutting unless constantly followed up with the catheter. He wished to know if there is anything better than simple dilatation. Cutting and divulsion are more rapid, but he thought gradual dilatation offered as good and permanent results.

DR. W. T. BELFIELD suggested two points in Dr. Axford's paper that required notice, the value and the safety of cutting. He thought it absolutely imperative that we limit our cutting operations strictly to the pendulous urethra. This was not merely a theoretical and anatomical consideration, but a practical one. He thought Dr. Axford in speaking of the three methods, stretching, divulsion and cutting, omitted one of the most importance, viz., the use of a constant electric current. Although this had not received a great deal of attention from the profession, he thought anybody who tried it would never give it up. It is said to produce the most permanent results, and is convenient and easy. He had tried it in his own practice, once in the hospital where he had the privilege of cutting, but tried the battery out of curiosity and found it worked nicely, and again in private practice where it was extremely important to the patient that no perineal section should be done. As to stretching the female urethra with the fingers, he thought it dangerous. When house surgeon in the County Hospital he had seen a woman die of peritonitis when that was done. He thought the best instrument for this purpose to be Stein's dilator, which has a continous dilatation.

DR. W. L. AXFORD said, in conclusion, that dilatation always had to be followed out by the occasional passage of the sound for an indefinite period of time; all the patient's life. If the stricture is divided clear through, Dr. Otis claims that perfect cure will be made and no after treatment will be necessary. Dr. Axford thought that Dr. Otis, although an extremist on this subject, is about right. As to cutting

in the membranous urethra, he did not think any one would do that. He never had experience with the galvanic current, had heard it recommended and also discountenanced. In dilatation of the female urethra he had always used his fingers and succeeded first rate. Would always prefer to use his own hand, as no instrument equals the human hand.

DR. H. T. BYFORD read a paper on the

PRODUCTION AND PREVENTION OF LACERATION OF THE PERINEUM,

with description of an unrecognized form. Illustrated. For the purposes of illustration the perineum was divided into two parts, the vulval or external, and the vaginal or internal. The former lies external to the muscles and the latter includes all the rest. When the perineum is slightly stretched by the head two rings may be felt by hooking the finger over the fourchette; an external ring marking the edge of the vulva and an internal ring marking the edge of the muscles and fascia about the vaginal orifice. Upon the positions and relations of these rings depends the safety of the perineum. When the occiput engages in them before the forehead passes the coccyx, the fourchette and muscular edge are pressed downwards and the perineum but little bulged and not at all endangered. When the occiput does not engage in the rings before the forehead leaves the coccyx, the fourchette is pushed upward before it, the perineum stretched from three to four inches antero-posteriorly, while part of the propelling force and nearly all of the directing force are lost before the head passes the rings and is born. The head in such cases has a greater distance to travel before delivery, involving loss of time and strength.

The author described an obscure but not infrequent form

of rupture in which separate muscular fibres and portions of the fascia give way all through the perineum, or through a region of it, without involving skin or mucous membrane. Frequently there were not enough unruptured fibres left of the tissues to insure contraction and involution, and thus prevent displacements of the uterus. A persistent flabbiness is the chief diagnostic sign. To prevent rupture Dr. Byford advised: 1. To gain time for dilatation without injury to the deeper tissues by favoring a slow advance of the head over the floor of the pelvis. 2. In order to secure sufficient dilatation of the vulval and vaginal rings to make the occiput ride over them instead of hooking under them by keeping the membranous pouch intact, or in its absence early resort to artificial dilatation rather than wait for the fourchette to be thus hooked up over a bulging perineum, and then resort to the ordinary methods.

DR. G. H. RANDALL thought that by directing the head many perineums might be prevented from rupturing. We sometimes fail to direct the head and manipulate the perineum as each case requires because the woman is not in the proper position. Formerly he had delivered most of his cases in the dorsal position, but not being satisfied with the way he was able to manipulate the perineum and head, he had tried the lateral position, and it seemed a great improvement. He could now support the perineum by directing the head with a great deal more ease and effect than ever before, and it seemed to him that the lateral position is preferable to the dorsal.

Owing to the lateness of the hour PROFESSOR R. G. BOGUE deferred reading his paper on "A Case of Oöphorectomy and of Nephrectomy," but exhibited specimens, and

said: "The specimen that I have here is that of a remarkable cystic ovary in which both ovaries, with a large portion of the Fallopian tubes, were removed. I have but one to present, though the whole surface of the ovary, or ovaries, was studded with small cystic tumors. The case was one of long-standing invalidism, and attended with a great deal of suffering. Finally the question of removal of the ovaries came up, and it was decided to remove them. They were removed and the patient recovered.

The other specimen that I have is a wax model of a calculus which was found in the pelvis of a kidney during an operation for removal of fibro-nephroid kidney. On opening the loin, making the posterior operation and cutting of the kidney, it was found to be immensely distended and filled with pus, and in the pelvis of the kidney was quite a large calculus. The calculus was claimed by the family and given them, a wax cast of it being retained. The patient from whom this was removed did not recover."

Exhibition of pathological specimens from Batty's operation, and specimens of ovarian tumor with twisted pedicle, by PROFESSOR C. T. PARKES, who said:

"The specimens which I have to present to you on this plate are two ovaries and forty gall stones. The two ovaries were removed from a lady who had suffered for over ten years from a great deal of trouble in the pelvis. They are noticeable in that the left one is very small and the right one very large.

In this box are forty-three gall-stones which I removed from a gall-bladder yesterday.

In reference to the oöphorectomy, I desire to call attention to the knot used in securing the pedicle and which has been ren-

dered famous by Mr. Tait; he calls it the Staffordshire knot. Its use got me into trouble. It does not secure the pedicle by merely tying the knot. It must be drawn sufficiently tight to cut off circulation in the pedicle before the final knot is secured, otherwise the pedicle is very feebly constricted. I used it in this case in securing the left ovary, and passed on to the removal of the right ovary, during which operation I noticed that a good deal of bleeding was going on. Having removed the right ovary, I then looked for the point of hæmorrhage and found a spurting artery in the unsecured left pedicle. I was astonished, because I thought I had tied the knot very tightly. It is necessary that the constriction should be made by the string, and the circulation must be entirely cut off before any attempt at tying is made. The other specimen is a large tumor, the weight of which was estimated at twenty-three pounds. Eight days before the operation the patient, having been in a previous condition of apparent good health, was suddenly taken sick, temperature 102° F., pulse very fast and feeble, abdomen tender from peritonitis, urine suppressed. I diagnosed a twisted pedicle, and advised immediate operation. The operation was done as soon as possible, and although she was in a very feeble condition at the time, the operation apparently made very little impression upon her. As soon as the abdominal incision was made a black tumor presented, and instead of the cyst portion being uppermost, as is almost invariably found, the solid portion was in front. When the trocar was pulled out there was scarcely any hæmorrhage from the opening made by it; usually there is considerable hæmorrhage, especially when introduced into a solid tumor. When it was removed from the abdomen there was found to be a turn and a half

in the pedicle. The temperature fell after the operation and did not again come up to one hundred. On the seventh day all the stitches were removed, and the patient is practically well to-day. These tumors sometimes have pedicles twisted completely off, so that they are in a sloughing condition; in other cases the twisting goes on so slowly that the pedicle is finally destroyed entirely. Spencer Wells says that he has found tumors with no pedicles. The three points that seem to me to indicate this diagnosis are the rapid occurrence of distension, the commencement of peritonitis, and the suppression of urine."

The President said, in answer to a question, that because a patient has symptoms of gall-stones and the evidences are pretty positive of their presence, no one must imagine that thereby he is going to have an easy time of the operation. The case from which these gall-stones were removed was a very difficult one for operation. The patient was a woman of considerable adipose tissue on the surface of the body, and it was difficult to expose the gall-bladder at all. The liver, instead of being distended and projected below the ribs, was contracted and high above them. It was difficult to find the gall-bladder at first, and it was found to be about the size of a finger, elongated and lying in its natural position and adherent to the liver. The fundus was contracted and hardened or thickened so that the finger had to be passed well down along its surface before any evidence of the stones could be found at all; it was separated from its attachments to the under surface of the liver, and then by carrying a thread through its fundus it was lifted to the top part of the incision and the finger introduced into the cavity of the gall-bladder and the stones removed. Of these stones the largest was

found in the gall-duct. It was forced from the gall-duct into the gall-bladder.

DR. H. P. MERRIMAN asked the President if any cause was known for the twisting of the pedicle in ovarian tumor.

THE PRESIDENT said that he made very close inquiry on that point; the night previous to the occurrence of the trouble the patient felt something move in the abdomen from the left to the right side. She was lying in bed at the time. In reply to Dr. Strong the President said he did not think that rupture of the cyst would not be followed by an increase in the size of the abdomen, nor by any change in the function of the kidney.

DR. W. FRANKLIN COLEMAN read a paper on

A REPORT OF THREE CASES OF OSSIFICATION OF THE CHOROID, AND THE REPORT OF ONE CASE OF OSSIFICATION OF THE LENS, WITH SPECIMENS.

In cases one, two, three and four, the eye had been lost five, twelve, fourteen and thirty-four years respectively before medical advice was sought, on account of sympathetic trouble in the fellow eye. In cases one, two and four, the lost eye had occasionally been painful. In cases one, two, three and four, sympathetic disease did not occur after the loss of the eye until five, twelve, eleven and eighteen years respectively. The sympathetic disease excited in case one was serous keratoiritis; case two, cyclitis; case three, irido-cyclitis and cataract; case four, optic neuritis and mild iritis. Dr. Coleman advised the immediate enucleation of a bony eye on the same ground that the enucleation of an eye lost from injury in the ciliary region would be advised. Neither the ossification nor the injury is, in itself, the immediate cause of the sympathetic disease, but either may be the indirect cause by exciting an iridecyclitis.

DR. R. TILLEY said the term ossification of the lens might lead to a misunderstanding that there is actually ever an ossification of the lens. Becker, of Heidelberg, claims that ossification of the lens cannot and does not take place, and that there is no case of it on record. He says that in the case of a ruptured capsule, a membrane may be developed from the ciliary region, and from the developing blood-vessels an ossification may take place in the region of the lens, but that it should not be called an ossification of the lens. He gives an interesting case showing how readily a mistake may be made and ossification supposed: A boy was struck in the eye with a hay fork, and came under his care about ten hours after the accident. Forty-three hours after the accident the eye was enucleated, and he thought from a macroscopic examination that the lens was intact, but on microscopic examination, what he supposed to be the lens was found to be an extravasation of blood, and the lens had escaped. He remarked that it is easy to see that an ossification might have occurred, under these circumstances, and the same been taken for the lens.

DF. COLEMAN said, in conclusion, that he was well aware that literally and truly the lens fibres do not become ossified, but wherever connective tissue exists ossification may occur, and connective tissue may occupy the site of the lens. Dr. Voorhies cites a case in his own practice of an ossific mass occupying the normal position of the lens which an expert microscopist, upon examination, pronounced ossification of the lens. Dr. Knapp does not say he denies the possibility of such ossification.

LOCAL NEWS.

RUSH MEDICAL COLLEGE.—The Annual Commencement of Rush Medical College was held on Tuesday, February 16. Diplomas were conferred on 156 graduates. Five diplomas were conferred *pro causa honoris*. The total number of matriculates during the winter session was 404; during the preceding spring term, 138.

Professor Norman Bridge, M.D., formerly Professor of Hygiene, and Adjunct Professor of the Principles and Practice of Medicine, has been elected Professor of General Pathology.

Hereafter, practical work in the physiological and pathological laboratories will be required of undergraduates.

THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.—The Annual Commencement of the College of Physicians and Surgeons of Chicago was held on Tuesday, February 23. Degrees were awarded to 71 members of the same class, which numbered 85. During the winter session there were 165 matriculates. Dr. E. F. Wells, of Minster, Ohio, has been elected Professor of Materia Medica.

PROF. E. QUINE has resigned the chair of Practice of Medicine.

CHICAGO MEDICAL COLLEGE.—University-Day was celebrated by students of the Northwestern University on Monday, February 22. The Chicago Medical College, the Medical Department of the University, was well represented by a delegation of 80 students.

At the general meeting, during the afternoon, brief addresses

were made by PROF. S. J. JONES, M.D., representing his colleagues of the Faculty of the Medical Department, and by the HON. HENRY BOOTH, LL.D., DEAN of the Law Department of the University, representing his colleagues of that department.

CHICAGO MEDICAL COLLEGE.—The twenty-seventh annual commencement exercises of the Chicago Medical College, Medical Department of the Northwestern University, were held on Tuesday, March 23.

Rev. Joseph Cummings, D.D., LL.D., President of the University, conferred the degree of Doctor of Medicine upon thirty-six members ot the senior class. The *ad eundem* degree of Doctor of Medicine was conferred upon William Albert Dickey, M.D., Ezra Augustine Palmer, M.D. George E. Vance received the honorary degree of Doctor of Medicine.

Normal histology is studied in the microscopical laboratory during the first year.

During the past year a laboratory devoted to pathological histology has been created.

A determined effort is being made by the friends of the institution to establish a physiological laboratory.

During the past year instruction has been given in comparative embryology.

COOK COUNTY HOSPITAL.—An adjourned meeting of the Board of County Commissioners was held on Saturday, February 27, Commissioner Klehm in the chair.

The Committee onHospitals asked the appointment of the following physicians upon the medical staff of the County Hospital, to constitute the Medical Board of that institution:

Surgeons—Christian Fenger, J. B. Murphy, A. J. Baxter, J. M. Hutchinson, W. P. Verity, Leonard St. John, D. A. K. Steele, E. W. Lee, Truman W. Miller.

Physicians—Norman Bridge, P. J. Rowan, H. C. Kerber, A. C. Cotton, S. A. McWilliams, G. B. Abbott, John A. Robison, D. W. Nolan, Andrew J. Coey.

Obstetricians and Gynæcologists—John Guerin, Ferd Henrotin, F. C. Schaefer George H. Randell.

Ophthalmologist and Otologist—W. F. Smith.

Pathologist—Elbert Wing.

The report was adopted.

HOSPITAL APPOINTMENTS.—The following appointments have been made at the different hospitals in this city:

At Cook County Hospital—Internes: S. C. Plummer, R. Bernauer, W. N. Hibbard, W. S. Pickard, L. J. Mitchell, E. M. Smith, G. W. Post, F. L. Marion. Externes: R. Chandler, L. Goldstein, A. J. Ochsner, W. C. Abaly.

St. Luke's Hospital—Internes: C. H. Easter, E. J. Hurie.

Presbyterian Hospital—Internes: A. J. Ochsner, G Marion.

Mercy Hospital—Internes: W. H. Marble, A. C. Broell.

ITEMS.

ANOTHER HIGH-GRADE MEDICAL SCHOOL IN THE NORTHWEST.—On February 3rd, 1886, the new buildings of the ST. PAUL MEDICAL SCHOOL were formally dedicated to the cause of higher medical education.

The St. Paul Medical School was organized in 1871 as a preparatory school, and reorganized on the same basis in 1876. It was organized as a regular medical college with a GRADED COURSE OF FOUR YEARS in 1878. In 1880 the school was transferred to Minneapolis, but in 1885 was brought back to St. Paul.

It is now organized on a basis of a GRADED COURSE OF INSTRUCTION, extending through THREE YEARS.

THE NEUROLOGICAL REVIEW.—It is announced that the first number of *The Neurological Review* will be issued between the 15th of this month and the 1st of May succeeding.

Thereafter the *Review* will appear monthly, under the editorial direction of Professor J. S. Jewell, of Chicago, assisted by Dr. H. M. Bannister, of Kankakee. Its contents will be arranged according to the following plan:

I. Original and Selected Articles.

II. Editorial Department.

III. Review Department.

The success of the *Journal of Nervous and Mental Diseases*,—published until within a few years in Chicago, under the same editorial management,—in collecting, digest-

ing, and discussing neurological science may be accepted as an earnest of what may be expected of the new journal.

The *Medical Analectic*, a monthly periscopic summary of the progress of medical science, published by G. P. Putnam's Sons, will hereafter be edited by R. W. Amidon, A.M., M.D., New York.

INSANITY FROM CATARACT OPERATIONS. — Landesberg (*Medical and Surgical Reporter*, volume LIII.) has had three cases in which mental confusion, violence, visual and auditory hallucinations resulted after cataract operations. That the operation had an influence in producing the mental phenomena is shown by the twelve similar cases reported by Schnabel (Bericht. der Verein für Medic. Wissens. Insbruck Jahrg. XIII). In 186 cataract operations performed by Schnabel, he observed but these twelve cases, all of whom were between 66 and 80 years old; there were ten men and two women. That the operation caused the insanity is shown by the fact that when, in cases of double cataract, the mental symptoms resulting from the operation on one eye had subsided, they were immediately reproduced on the operation being repeated. Sichel (*L'Union Médicale*, No. 1, 1869) was the first to notice this insanity, and it has been suggested (*Journal of Nervous and Mental Diseases*, volume XI) that the approach of senility predisposed to it. As in all insanity of the confusional hallucinated type, the patient rapidly recovers.

ANNOUNCEMENTS.

THE AMERICAN MEDICAL ASSOCIATION.—The thirty-seventh annual session will be held in St. Louis, Mo., on Tuesday, Wednesday, Thursday and Friday, May 4, 5, 6, and 7, commencing on Tuesday, at 11 A. M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies as are recognized by representation in their respective State Societies, and from the Medical Department of the Army and Navy and the Marine Hospital Service of the United States.

"Each State, County, and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular state, territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the code of ethics of the Association."

Sections.—"The Chairman of the several Sections shall prepare and read, in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their respective Sections. * * * *."—*By-Laws, Art. II, Sec. 4.*

Practice of Medicine, Materia Medica, and Physiology.—DR. J. T. WHITTAKER, Cincinnati, Ohio, Chairman; DR. B. L. COLEMAN, Lexington, Ky., Secretary.

Obstetrics and Diseases of Women and Children.—DR. S. C. GORDON, Portland, Me., Chairman; DR. J. F. Y. PAINE, Galveston, Texas, Secretary.

Surgery and Anatomy.—DR. NICHOLAS SENN, Milwaukee, Wis., Chairman; DR. H. H. MUDD, St. Louis, Mo., Secretary.

State Medicine.—DR. JOHN H. RAUCH, Springfield, Ill., Chairman; DR. F. E. DANIEL, Austin, Texas, Secretary.

Ophthalmology, Otology, and Laryngology.—DR. EUGENE SMITH, Detroit, Mich., Chairman; DR. J. F. FULTON, St. Paul, Minn., Secretary.

Diseases of Children.—DR. W. D. HAGGARD, Nashville, Tenn., Chairman; DR. W. B. LAWRENCE, Batesville, Ark., Secretary.

Oral and Dental Surgery.—DR. JOHN S. MARSHALL, Chicago, Ill., Chairman; DR. A. E. BALDWIN, Chicago, Ill., Secretary.

A member desiring to read a paper before a Section should forward the paper, or its title and length (not to exceed twenty minutes in reading), to the Chairman of the Committee of Arrangements, at least one month before the meeting.—*By-Laws.*

Committee of Arrangements.—DR. LE GRAND ATWOOD, St. Louis, Mo., Chairman.

THE AMERICAN SURGICAL ASSOCIATION.—The next annual meeting of the American Surgical Association will be held in Washington, D. C., on April 28th, 29th, 30, and May 1st.

THE ILLINOIS STATE MEDICAL SUCIETY.—The Thirty-Sixth Annnal Meeting of the Illinois State Medical Society will be held in Bloomington ,beginning on the third Teusday in May, at 10 A. M.

BOOK REVIEWS.

THE PRINCIPLES OF HOUSE-DRAINAGE. *By* J. PICKERING PUTNAM. *Boston:* TICKNOR & CO.; *Chicago:* JANSEN, MCCLURG & CO. *pp. 125, with illustrations.*

This is a practical little book, written by an architect who has evidently made a full study of the subject. It is intended for the general reader as much as for those engaged in the specialties of building, and contains excellent descriptions and explanations.

It must be said, however, that the author is interested in the sale of various plumbing fixtures, invented by himself, and he has probably given too much space to a discussion of these.

J. H. L.

EPILEPSY AND OTHER CHRONIC CONVULSIVE DISEASES; THEIR CAUSES, SYMPTOMS AND TREATMENT. *By* W. R. GOWERS, M.D., F.R.C.P. *Large octavo, pp. xi, 255. New York:* WILLIAM WOOD & CO. *Chicago:* W. T. KEENER.

This work is largely based on the carefully recorded histories of some 1,450 cases, many of them having been treated in The National Home for the Paralyzed and Epileptic. This mass of clinical material has been carefully worked up, and the result is an exceedingly valuable monograph. The author does not make the too common mistake of tabulating all his figures, and allowing the reader to draw his conclusions from the footings of each item, but he has

made a thorough analysis, and in the main the conclusions are just and accurate.

The diagnosis of "hysteroid" attacks is very clearly explained, as well as their relation to other convulsive diseases.

The chapter on treatment is perhaps the most unsatisfactory in the whole book, and contains very little that is new. Until the intimate pathology of epilepsy shall be known, when some safe generalizations may be made concerning the action of drugs in this disease, treatment will probably continue to be unsatisfactory. The author wisely, we think, refrains from any deductions of this kind. The references to the literature of the subject are somewhat scanty, but those that are given cover a wide range. We think an extensive bibliography would have been more in keeping with the character of the work. It is surprising to find that the publishers have bound sixty-four pages of advertising matter in the back of such a book as this, but even that will not prevent many from purchasing Dr. Gowers' really valuable work.

H. N. M.

CLIMATOLOGY AND MINERAL WATERS OF THE UNITED STATES. *By* A. N. BELL, A. M., M. D. *pp. 386. New York:* WILLIAM WOOD & CO.

This is the October number of *Wood's Library* for 1885, and is an acceptable addition to the list already published.

A work of this nature is necessarily a compilation, and the author has shown good judgment in selecting from weather reports, detached analyses, society proceedings and other sources the valuable tables and explanations here given.

J. H. L.

THE ESSENTIALS OF PHYSICS AND CHEMISTRY. *By* CONDICT W. CUTLER, M. D. *New York:* J. H. VAIL & CO.

This is a small book, or, better, a collection of "pocket editions" published at different times, and now bound together. The whole is a fair illustration of the frauds offered to medical students, and is characterized by careless composition, incorrect statements and a complete misconception of what a medical or general student should know of physics and chemistry.

J. H. L.

A MANUAL FOR THE PRACTICE OF SURGERY. *By* THOMAS BRYANT, F.R.C.S. 1885. *Fourth Edition, etc., etc.* Pp, 1026. *Philadelphia:* HENRY C. LEA'S SON & CO. *Chicago:* JANSEN, MCCLURG & CO.

The fourth edition of this work is fully abreast of the times. The author handles his subjects with that degree of judgment and skill which is attained by years of patient toil and varied experience. The present edition is a thorough revision of those which preceded it, with much new matter added, notably in the chapters devoted to the pathological conditions of the eye and ear, and their treatment. He has also amplified his remarks upon hernia, the diseases of the genito-urinary organs and oral surgery. His definition of the term surgery is concise and comprehensive, viz.: "Surgery is of a two-fold nature; it is a science and also an art,—a department that requires to be known and another to be practiced." His remarks concerning the method of investigating a case are of value to the young surgeon. His diction is so graceful and logical, and his explanations are so lucid as to place the work among the highest order of text-books for the medical student.

Almost every topic in surgery is presented in such a form as to enable the busy practitioner to review any subject in every day practice in a short time. No time is lost with useless theories or superfluous verbiage. In short, the work is eminently clear, logical and practical.

The publication consists of one imperial octavo volume, containing 1,026 pages, and forms an admirable companion-book to Gray's Anatomy, which corresponds with it in size.

F. C. S.

INORGANIC CHEMISTRY. *By* EDWARD FRANKLAND *and* FRANCIS R. JAPP. *693 pages, octavo. Illustrated. Philadelphia:* LEA BROS. & CO. *Chicago:* JANSEN, MCCLURG & CO.

This work deserves more than a passing notice, although the names of the authors make this statement almost unnecessary. Men who have accomplished much as teachers, and whose scientific researches are of the highest order, are certainly in a position to write a book worthy of the careful study of any student, and a glance through the pages of the one before us is sufficient to show that we have here not a compilation, but a production of originality and of merit.

The book is intended for the use of students in our highest colleges and universities, and is a good introduction to the work of the specialist.

The peculiar formulæ which Frankland proposed some years ago, in his lecture notes, are here employed, and it will also be noticed that the subject of potable waters is treated somewhat more fully than one would expect in a general treatise.

J. H. L.

CLINICAL NOTES ON UTERINE SURGERY. *By* J. MARION SIMS, A. B., M. D., *Late Surgeon to the Woman's Hospital, New York. Memorial Edition. Paper, pp. XI, 401. New York:* WILLIAM WOOD & CO. *1886. Chicago:* W. T. KEENER.

The merits and demerits of Sims's "Uterine Surgery" have been so fully and frequently discussed in so many American and foreign medical journals, from its first appearance in 1866 up to the present time, that the reviewer's task is a work of supererogation. It may not be amiss, however, to note that Bandl's recent anatomical investigations into the normal position of the non-gravid uterus sustain in all essential particulars the conclusions clearly and distinctly described by Sims so many years ago.

Messrs. William Wood & Company have conferred a boon upon the English-speaking members of the medical profession in placing at their disposal a cheap edition of a book absolutely essential to the specialist, and without which the library of the general practitioner would be incomplete. W. W. J.

PRACTICAL SUGGESTIONS RESPECTING THE VARIETIES OF ELECTRIC CURRENTS AND THE USES OF ELECTRICITY IN MEDICINE. *By* AMBROSE L. RANNEY, M.D. *Small octavo, pp. ix, 146, and fourteen plates. New York:* D. APPLETON & CO. *Chicago:* JANSEN, MCCLURG & CO.

This little manual contains most of the essential facts regarding the use of electricity in medicine. We can confidently recommend it to those who have not the time to read a larger work, and to undergraduates, who will find it a valuable aid in the clinic and lecture.

That difficult subject, electrophysics, is handled in a brief

and creditable manner. The facts given are only those essential to an intelligent application of electricity in medicine.

The personal pronoun of the first person singular occurs with noticeable frequency, and some needless repetitions render the work less readable than it otherwise would be.

The motor points of the extensor aspect of the forearm, in plate iv., are incorrectly drawn.

H. N. M.

BOOKS RECEIVED.

The Methods of Bacteriological Investigation. By Dr. Ferdinand Hueppe. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

How We Treat Wounds To-day. By Robert T. Morris, M.D. New York: G. P. Putnam's Sons. Chicago: W. T. Keener.

The Diagnosis and Treatment of Diseases of the Ear. By Oren D. Pomeroy, M.D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

A Manual of Auscultation and Percussion. By Austin Flint, M.D., LL.D. Philadelphia: Lea Brothers & Co. Chicago: W. T. Keener.

Fractures and Dislocations. By T. Pickering Pick, F.R.C.S. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

Seventh Annual Report of the State Board of Health of Illinois.

Practical Human Anatomy. By Faneuil D. Weisse, M.D. New York: William Wood & Co. Chicago: W. T. Keener.

Essentials of the Physical Diagnosis. By E. Darwin Hudson, Jr., A.M., M.D. New York: Styles & Cash.

Tablets of Anatomy. By Thomas Cooke, F.R.C.S. London: Longmans Green & Co.

A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M.D. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

Local Anæsthesia in General Medicine and Surgery. By J. Leonard Corning, M.D. New York: D. Appleton & Co. Chicago: Jansen, McClurg & Co.

The Field and Limitation of Operative Surgery of the Human Brain. By John B. Roberts, A.M., M.D. Philadelphia: P. Blakiston Son & Co. Chicago: W. T. Keener.

A Guide to the Practical Examination of the Urine. By James Tyson, M.D. Philadelphia: P. Blakiston Son & Co. Chicago: W. T Keener.

Handbook of the Diseases of the Nervous System. By James Ross, M.D., LL.D. Philadelphia: Lea Brothers & Co. Chicago: Jansen, McClurg & Co.

PAMPHLETS RECEIVED.

A Case of Prolonged Gestation with Autopsy of the Fœtus. By M. Nunez Rossie, M.D. Manuel de Technique des Autopsies. Par Bourneville and P. Bricon.

What is Medicine? By Albert L. Gihon, A.M., M.D.

Transactions of the Medical Society of the State of Pennsylvania.

Eczema. By George H. Rohe, M.D.

Progress of Electrolysis in Surgery. By Robert Newman, M. D.

Insidious Septicæmia —A Rare, Deceptive, and Fatal Form of the Disease By George J. Engelmann, M.D.

A New Departure in Uterine Therapeutics. By George J. Engelmann, M.D.

Puerperal Pyrexia. By George P. Andrews, M.D.

First Annual Report of the Pathological Department Norristown State Hospital.

The Causation and Nature of Hypertrophy of the Prostate. By Reginald Harrison, F.R.C.S.

Cocaine in Hay-Fever. By Seth S. Bishop, M.D.

Proceedings and Addresses at the Sanitary Convention, held in Ypsilanti, Michigan, June 30th and July 1st, 1885.

Twelfth Annual Report of the Superintendent of the Cincinnati Sanitarium.

Report of an Inspection of the Atlantic and Gulf Quarantines. By John H. Rauch, M.D.

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THE CHICAGO

MEDICAL JOURNAL AND EXAMINER.

VOL. LIII. MAY, 1886. No. 5.

ORIGINAL COMMUNICATIONS.

ON THE ORIGIN AND DEVELOPMENT OF THE BACILLUS TUBERCULOSIS IN THE HUMAN LUNG, LIVER, SPLEEN, ETC.*

By H. D. SCHMIDT, M.D., *Pathologist to the Charity Hospital, New Orleans.*

INTRODUCTION.

In the following pages I shall state the results of a series of microscopical researches, which, since April, 1883, I have made in regard to the nature of the so-called bacillus tuberculosis of Koch, and to the true relationship of this

* The investigations described in this treatise were commenced in the spring of 1883, and continued to the beginning of July, 1884, by which time the author had closely studied the lungs and other organs of twelve or more cases of both miliary and chronic tuberculosis, besides having elicited the principal facts concerning the relation of the bacillus tuberculosis to the tissues of these organs. At this time, however, his expectations of seeing the results of these labors in print during the following winter were dwarfed by a fresh and severe attack of his old enemy, the rheumatism, which kept him confined to his couch for four long and weary months. When, in the ensuing autumn, he was again enabled to resume his accustomed labors, he resolved to render his observations more valuable by the special study of the organs of about fifteen more cases of tuberculosis, and by devoting more time to the preparation of the treatise and the execution of the accompanying illustrations than he had at first intended.

organism to the tissues of the human tuberculous lung, liver, spleen, etc. These researches may be regarded as a continuation of some others which I made during the summer and autumn of 1882, and the results of which were published in two articles in December, 1882, and February, 1883, in the CHICAGO MEDICAL JOURNAL AND EXAMINER.

Before, however, commencing to speak of these more recent researches on this subject, I deem it proper to present to the reader a few explanatory remarks on the statements concerning the bacillus tuberculosis of Koch, which I made in the two papers just mentioned.

It will be remembered by those who read these papers that, at that time, I failed to demonstrate the bacillus tuberculosis in sections of tuberculous lung, stained by the method which Koch had recommended in his paper, but that by treating these sections with a solution of caustic potash I discovered in the tubercles certain characteristic cells which contained, besides fat-globules and pigment-granules, numerous minute fat crystals. These crystals, representing very minute rods, so closely resembled in form minute bacilli that, as Koch had not mentioned them in his paper, they induced me to regard them as identical with the organisms which Koch had described. This error, as I have already remarked in my second paper, and as I may now repeat, would never have been committed if I had had the opportunity, before taking the above view, of actually seeing Koch's bacillus tuberculosis, or, if Koch, in naming the organism which he had discovered in human tuberculous lungs as well as in the expectorations of tuberculous patients, had considered a little closer the characteristic features of a bacillus, such as they have been defined by Cohn

in his classification of the bacteria family. I would not venture to express myself so fully on this subject if I had succeeded to see in only one instance among the thousands of these so-called bacilli tuberculosis, which I have now stained and examined in sections of tuberculous lung and in specimens of tuberculous expectoration, the features displayed which characterize the bacillus form of a bacterium. On the contrary, in every instance I found, not only the form, but all other characteristic features of a so-called spherobacterium. Instead of these organisms appearing in the form of minute rods, such as Koch has described them, they represent in reality shorter or longer filaments composed of minute granules. This granular composition of the bacillus tuberculosis of Koch was first observed by Gibbs, and published in August, 1882, in the *London Lancet*. But I must confess that my faith in the true bacillus form of the organism in question, as described by Koch himself, was at that time so great as to incline me to think that the granular filaments, mentioned by Gibbs, did not truly represent the rod-like bacillus tuberculosis of Koch. And accordingly, when I came to observe these granular filaments in tuberculous sputa, treated with a solution of caustic potash, I regarded them as the organisms mentioned by Gibbs, without ever suspecting them to be representations of the veritable bacillus tuberculosis of Koch. Guided then in microscopical examinations by the idea that the bacillus tuberculosis of Koch must show itself in the form of a minute rod, such as its name implies, it must not be wondered that, when discovering in certain degenerating cells of the tubercles minute rod-like fat crystals, which in form closely resembled minute bacilli, the idea arose in my mind

that they might be identical with Koch's bacillus tuberculosis. This idea was strengthened not only by the fact that the cells containing these crystalline pseudo-bacilli were met with in the very places where Koch had located his bacillus tuberculosis, that is, along the periphery of the tubercle and outside of the cheesy centre, but moreover by these peculiar cells never having been mentioned in his paper. In the course of this treatise I shall have opportunity to refer again to these cells, which, as far as I know at present, are not identical with the true neoplastic cells of the tubercle, but which, nevertheless, are not without signification in the histological development of this neoplasm. When finally, in January, 1883, the true bacillus tuberculosis of Koch was shown to me in a specimen of tuberculous pustum, such as I mentioned in my second paper on the subject, I found that it was identical with the granular filaments to which Gibbs had referred in his paper, I did not hesitate to acknowledge this fact.

More than three years have passed since my second paper on this subject was published, in which I notified the reader that I should take up the subject again as soon as I should have procured the proper staining material, and not rest until I should have either satisfied myself as to the existence of this pretended parasite, or at least have thrown some light upon the different forms under which it had appeared to different observers. Since that time the bacillus tuberculosis has been a common object of microscopical examination, and thousands of specimens of tuberculous sputum have been stained and examined, and numerous articles written and lectures delivered on the results of these microscopical examinations. But as they were, with a comparatively

few exceptions, chiefly made by clinicians for diagnostic purposes, with the view of simply determining the presence or absence of the bacillus tuberculosis in the lungs of their patients, no further light was thrown upon the true origin of the organism, or upon the manner in which it gained access into the human lungs. Nor have the hundreds of thousands of inoculations with tuberculous matter, hitherto made on various kinds of animals, demonstrated anything more than the empirical fact of the presence or absence of the bacillus tuberculosis in the lungs or other organs of the inoculated animal, proving simply the transferability of tuberculosis from one animal to the other. The study of this minute, apparently parasitic organism in the human lungs, the most important locality where it is met with, appears to have been greatly neglected. Those investigators, even, who studied this organism in the tissues of these organs, appeared to have cared mainly to satisfy themselves as to its presence or absence in the latter, for, if their histological labors had been carried on more closely, they would not have failed to observe certain facts which closely bear on the nature and development, and even origin, of these bacteria, and which in the following pages, will form the chief part of my subject.

From the remarks just made it may then be inferred that while much has been done, since Koch first announced his discovery of the bacillus tuberculosis, by way of clinical observation and experimental pathology, to solve the so-called bacillus tuberculosis question, the microscopical research in the field of pathological anatomy has, to the extent of my knowledge, rather been neglected. The reason for this negligence, however, may be easily found in considering that the material for clinical observations, as well as for experimen-

tal pathology, is more abundant and more easily obtained than that required for extensive and thorough microscopical researches in pathological anatomy. Every medical practitioner meets with cases of tuberculosis in his daily practice, and as the preparing and staining, as well as the microscopical examination of a little tuberculous sputum, does not require extraordinary skill, nor consume much time, he will have sufficient opportunity of making his own clinical observations on the subject,—while, on the other hand, the material required for extensive investigations in pathological anatomy can only be obtained in connection with the pathological departments of large hospitals. Thus it has happened that so many thousands of specimens of tuberculous sputum have hitherto been examined and discussed in medical societies and journals, while more extensive microscopical studies of thin sections of tuberculous lung, or other organs, have thus far only been made by a comparatively very small number of investigators.

My own labors relating to the bacillus tuberculosis were closely confined to the field of pathological anatomy, for the reason that in this field I am in every respect prepared to do justice to the subject,—not only as regards the abundant fresh pathological material constantly at my disposal, but moreover as regards the proper outfit and assistance for the making of accurate and extensive histological researches. As regards the optical instruments which I use, I may say that during these last twenty-six years I have worked exclusively with first class objectives of the best makers, but especially with those made by the late Mr. Tolles, while the microscopical stands which I have used represent the large patterns made by Mr. Joseph Zentmayer, and constructed for the adaptation of any accessory optical appliance that can facilitate and per-

fect microscopical examinations. I may state that I have complied with Koch's demand in pursuing my special studies of the bacillus tuberculosis with the assistance of a $\frac{1}{10}$ inch homogeneous immersion objective, which, in the summer of 1884, Mr. R. Tolles made for me for this special work. This objective, constructed not for the purpose of resolving the fine lines of diatoms, but for histological work, with a view of obtaining penetration and perfect definition, is, from what I know, if I may be allowed to say in honor of its maker, the equal to any other objective hitherto made. Besides this objective I also made use of Abbe's illuminating apparatus, which Mr. Zentmayer had adapted to my microscope. Both this apparatus and the homogeneous immersion objective, though they are not absolutely essential, I have reason to say with Koch greatly facilitate an accurate study of the bacillus tuberculosis and its relations. In my own case they proved of great service in confirming the correctness of the observations which I had previously made with dry or water immersion objectives, and a Powel and Lecland's homogeneous achromatic condenser.

In order to properly understand the question of living germs of disease, it is necessary that the reader should be familiar, to a certain extent, with the exact definition of the different forms of bacteria upon which the classification of these organisms is based. Unfortunately the great majority of practicing physicians are unacquainted with the difference of form, or other characteristic features, existing between these minute organisms, which by many physicians are regarded as the original cause of a now considerable number of diseases: for, as they look upon these beings only from a practical point of view, it matters to them very little whether the living germ appears in the form of a sphero-bacterium, or in that of a

bacillus. To them the monas tuberculosis of Klebs, the micrococcus tuberculosis of Toussaint and the bacillus tuberculosis of Koch are one and the same in point of signification, as all three have been presented to them as the original cause of tuberculosis. And it is not improbable that the practical physician, in confounding these forms with one another, has come nearer to the truth than the speculating and theorizing bacteriologist. Nevertheless, in treating our subject more philosophically and from a pathological point of view, it is very important that we should be precise in the terms we use and see that they closely correspond with the true definition of the object in question. For this reason, I shall, before proceeding to the description of my observations, make a few passing remarks on the morphological characters of the different kinds of bacteria and their transformation from one form into another.

Although several attempts have been made by divers naturalists to arrange the different kinds of bacteria (Schizomycetes, cleft fungi) according to their form, or other prominent characters, into a number of systematic groups, no perfect classification of these organisms has hitherto been attained. The reason of this failure is to be found in the want of permanency in the various forms under which the bacteria, such as they occur in nature, present themselves to the eye of the observer. The classification which has been most generally used, on account of its convenience for practical purposes, and which for this reason I have formally followed myself, is that of Cohn. It is chiefly based upon the morphological character of the organisms concerned, and consists of the following four groups: 1, *Spherobacteria*, appearing in the form of minute spherical, or oval, cells, the diameter of which is generally less than 0.00 mill. They either appear singly or

adhering to one another in pairs, or in chains, formed by a smaller or greater number of cells. When their multiplication by the division of the individual cells becomes very active, they aggregate into masses, or colonies, generally called "zoglœa," which are embedded in a gelatinous material, secreted by the cells. This group embraces but one genus, that of *micrococcus*; 2, *Microbacteria*, embracing, in a narrow sense, the single genus *Bacterium*, represented by short cylindrical, or elliptical cells, which also hang together in pairs. They very rarely appear in the form of chains, though they are met with in the form of zoglœa with abundant intercellular substance; 3, *Desmobacteria*, represented by straight cylindrical cells, usually much longer than wide. They occur isolated, but are usually united in chains. While some of them exhibit active spontaneous movements, others appear motionless. They are represented by the genera *Bacillus* and *Vibrio*; 4, *Spirobacteria*, appearing in the form of cylindrical cells, generally several times as long as wide, and spirally around, similar to a corkscrew. They embrace the genera *Spirillum* and *Spirochæte*. There are a number of other genera of the cleft fungi which, however, may be passed over for the sake of brevity.

When Cohn conceived the above classification of the bacteria, he regarded each of these forms as a distinct seperate genus, the individuals of which would under all circumstances not only reproduce the same forms, but be also endowed with the same physiological properties. In accordance with this view, germ theorists attributed a specific property of producing one or the other specific disease to each form of pathogenic bacteria. More recent investigations, however, have shown that this view is erroneous, and that the forms and other characters of these genera are by no means permanently fixed, but that,

on the contrary, one form may, in the course of development, be converted into another. Thus, a bacillus may be developed from a micrococcus, and finally divide again into smaller cells to reassume the micrococcus form. The idea of different forms of bacteria representing but different phases of development of a single natural germ was already advanced, more than ten years ago, by Billroth and some other mycologists; but it was particularly upheld by Nägeli, who pointed out the probability that the various forms, under which the schyzomycetes, or cleft fungi, present themselves, might actually represent but a few natural genera. Nägeli's view that not only the forms of the bacteria, but also their physiological properties, may be altered by artificial cultivation in different nutritive media, was subsequently corroborated by the interesting experiments of Hans Buchner, which experiments, as far as I am able to judge from the perusal of his writings, were made with accuracy, necessary precautions and perseverance. These consisted principally in the conversion of the so-called infectious *bacillus anthracis* into the harmless, non-infectious hay-bacillus, or *bacillus subtilis*. This conversion Buchner effected by supplying the former very freely with oxygen during its cultivation, first in a solution of Liebig's extract of meat, pepton and sugar and afterwards in an infusion of hay. These cultivations were carried through 1,500 generations of the fungus in a space of six months. On the other hand, Buchner converted the non-infectious hay-bacillus, such as it occurs in nature, into the infectious bacillus anthracis by cultivating it, first in egg-albumen and solution of meat extract, and then finishing the cultivation in fresh blood taken from rabbits. He furthermore demonstrated very closely the changes taking place in the form of the bacteria; that is, in the length and width of their individual cells or joints, when cultivated in different nutritive

substances. The results which Buchner obtained from his experiments, concerning the convertibility of infectious into non-infectious bacteria, and *vice versa*, and which so conclusively confirmed Nägeli's views regarding the constancy or inconstancy of the forms and physiological properties of these organisms, were, as ought to have been expected, severely criticised by those mycologists who upheld the theory of the specificity of form and property, among whom were Koch and his followers. But the arguments, directed by Koch himself, against the trustworthiness of Buchner's investigations, and calculated to invalidate the facts brought to light by the labors of this investigator, were answered by Buchner in a lengthy but very able treatise, in which, by reviewing and analyzing, in a clear, scientific style, every single point in the charges made against his method of investigation, he deprived the arguments of his opponents of every trace of foundation.

The investigations of Buchner were followed by a series of others, made by Zopf on the highest developed forms of the cleft fungi, viz., Cladothrix, Crenothrix and Beggiatoa, the results of which fully corroborated the view held by Billroth, Nägeli, Buchner, and others. The investigations of Zopf consisted in carefully cultivating the named genera of schizomycetes for the purpose of obtaining each individual germ in a pure condition; that is, isolated from individuals belonging to another genus, or species. The numerous microscopical examinations, made of the fungi concerned during their development, showed him that not only micrococci would grow into bacilli, or the latter be converted into the former, but that even the sword and screw-like forms of the spirilla and spirochæte would appear in one and the same genus during the course of development. The interesting and important results which Zopf obtained from his extensive researches into the development of

the cleft fungi and cleft algæ, were published by him in the form of a treatise, fully illustrated by seven beautifully executed lithographic plates * Subsequently to this treatise he published another on the cleft fungi in particular,† in which he treats in a systematic style of the history, anatomy and classification of these organisms. In this little work the subject is treated from the most recent standpoint, based upon the latest observations on the schizomycetes. I do not hesitate to say that I have gained from this little work more definite and positive information, as regards the morphology and nature of bacteria, than from all other works and treatises on the subject I had previously read. Not only this, but certain phenomena which I had observed on different occasions, and for which I was unable to find a satisfactory explanation in other works, were rendered clear to me by the writings of Zopf. These phenomena I observed with bacteria contained in urine, and, as they relate to the subject, I may here briefly state some of them. Bacteria, as is generally known, are very often met with in pathological urine, into which, it is commonly believed, they gain access from the surrounding air, after this fluid has been voided from the bladder. This is probably true in most instances, though, sometimes, I have suspected the reverse, and, in one particular case, in which these organisms were observed in the urine in very great numbers, I convinced myself of their being present in this fluid before its leaving the bladder, by microsopically examining it directly after it was voided. At any rate, from what I know from the numerous

* Zopf. Zur Morphologie der Spaltpflanzen. (Spaltpilze und Spaltalgen.) Verlag von Veit & Comp. Leipzig, 1882.

† Zopf, "Die Spaltpilze."—Nach dem neuesten Standpunkte bearbeitet. Separatabdruck aus der Encyklopædie der Naturwissenschaften. Verlag von Eduard Trewendt, 1883.

specimens of pathological urine which are daily microscopically examined under my supervision at the pathological laboratory of the Charity Hospital, the number of these organisms varies very greatly in the different specimens of urine, collected at one and the same morning, for, while some may be met with in one specimen, and a small number only in the second, they may appear in very great numbers in the third. This fact, which I have observed for years, shows that the absence, or presence in greater or lesser number of the bacteria in the urine, stand in some relationship to the particular condition or constitution of this fluid. The bacterium generally met with is a small micrococcus (fig. 2 *a*) to which the name *micrococcus urinæ* has been applied, though, as it appears to me, it hardly differs in form from those bacteria generally met with in putrefactive liquids. The filaments of the ordinary urine bacteria are straight, and exhibit spontaneous movements. In many specimens of urine, however, a small number of another form of bacteria is met with, the individual filaments of which are seen scattered among the more numerous regular urine bacteria. These (fig. 2 *b*) are distinguished from the latter by their cells being slightly larger and adhering but very loosely to one another, making them appear like rows of beads; they are, moreover, slightly curved, and exhibit no spontaneous movements, resembling, on the whole, the filaments of mycoderma aceti. About two years ago I met these torula-form bacteria in very great numbers in a specimen of albuminous urine, in which the number of the regular urine-bacteria was so small as to be hardly noticed. Desiring to know the ultimate fate of the former I kept this urine for a further study. In re-examining it, accordingly, on the next day, I found these torula-form bacteria considerably increased in number, and, furthermore, that many of them had grown into long filaments (fig.

2 *e*.); on the third day these were also found to have very considerably increased in number. Subsequent microscopical examination revealed another kind of cells (fig. 2 *d*, and *e*.), which appeared to have arisen from the long bacterial filaments, as the bottle containing the urine had remained closed. These last cells appeared to represent true torulæ, multiplying, as the drawing shows, both by budding and by cell-division. A final examination, made some days afterward, showed another formation consisting in a number of long filaments, probably representing gelatinous envelopes, in which a number of small groups of micrococci (fig. 2 *f*.) were observed embedded. It is not improbable that these groups of micrococci originated by the breaking up of larger cells, such as Zopf observed in his investigations.

The above stated observations, which I made on the transformation of bacteria in urine, are too imperfect in themselves to sustain my particular theory, though they are sufficiently correct to corroborate to a certain extent the observations of Zopf and others. My principal object in mentioning them in this place, however, was not to attempt a corroboration of the facts observed by others, but rather to show that valuable information regarding the nature of bacteria may even be gained by casual observations made on these organisms when met with in those liquids in which they naturally occur. A thorough investigation of the whole subject, of course, cannot be made without having recourse to artificial cultivation,—a laborious task, for which I have never had the necessary time and convenience at my disposal.

From what I have said in the foregoing pages, then, we may safely infer that the metamorphosis of one form of

bacteria into the other, first pointed out a number of years ago by Billroth and Nägeli, has been proved finally by the labors of Cienkowski, Nealson, Buchner and Zopf to be a fact. The important bearing of this fact on the artificial cultivation of pathogenic bacteria, and with it on the whole question of living disease germs is obvious, as it shows the possibility of changing the form in which these bacteria in reality exist in the human organism, by transferring them to another nutritive substratum. While thus, for instance, the so-called bacillus tuberculosis may exist in the human lungs in the form of a micrococcus, it may be developed into a rod or bacillus form, when artifically cultivated in another nutritive medium.

Having by the foregoing introductory remarks prepared the reader for a better appreciation of the results of my recent investigations concerning the nature of the bacillus tuberculosis, and its relationship to the human lungs and other organs, and for the conclusions which may be drawn therefrom, I shall pass over to the description and discussion of my observations.

II.

REMARKS ON THE STAINING OF BACTERIA.

In connection with the demonstration of the bacillus tuberculosis in the thousands of specimens of tuberculosis expectoration, to which I have already referred, a great deal has been said and written on the comparative merits of the different methods for successfully staining this bacterium, and we are justified in presuming that, at the present time, most physicians are familiar with this subject. For this reason I might confine my remarks concerning the staining of thin sec-

tions of tuberculous tissue, as well as of tuberculous sputum, to a simple statement of the particular method which I employed, if there were not observed in the different anatomical elements of the tisues certain differences in the degree of staining, which demand a more extended discussion of this subject.

It may be safely asserted that in the special study of pathogenic bacteria the process of staining these organisms plays a most essential part, as it is alone by this process that their presence, as well as their comparative number in the tissues of one or the other organ can be safely determined. When the sections of tissues containing bacteria are very thin and treated with solutions of caustic potassa or soda, the organisms may under favorable circumstances be distinguished by a practiced eye from the tissues in which they are buried, though, at the same time, the chances of failure are sufficiently great to render this mode of preparation unreliable for a thorough study of the subject. Besides, in order to determine safely the presence of bacteria in sections of tissue by the aid of these solutions, the organisms should be present in considerable numbers, as, otherwise, they are very apt to escape observation on account of their resemblance to organic granules, or even to very minute fat globules. I, therefore, cannot but fully endorse the importance which Koch has attached to the staining of his bacillus tuberculosis for determining its presence in tuberculous tissues. The demonstration of certain points concerning the origin and development of these bacteria in the human lungs and other organs, which I observed in the course of my recent investigations, likewise depend upon a perfect staining of the tissues under examination.

When Koch first announced the discovery of his bacillus tuberculosis he claimed as one of the specific properties of this organism the capacity for retaining the aniline color by which it has been stained, in preference to any other color to which it may be subsequently exposed. Thus, if the bacillus has been stained in an alkaline solution of methyl blue—the original solution which Koch used—it would afterward refuse to absorb a concentrated watery solution of vesuvin, whilst all other bacteria, with the exception of the bacillus lepræ, would give up the methyl blue and absorb the brown color of the vesuvin.

This specific property, however, the bacillus tuberculosis only possesses to a limited degree, that is, as long as the animal tissues, in which it is lodged, have not absorbed the second stain; for as soon as these tissues are saturated and stained by the solution of vesuvin, the bacillus likewise will, at the expense of the blue, absorb the brown, though perhaps not as readily as the animal tissues. The failures which I experienced, when in 1882 I first attempted to stain the bacillus tuberculosis by Koch's original method, were due to my ignorance of this fact, for leaving, according to Koch's directions, my sections of tuberculosis lung fifteen minutes in the concentrated solution of vesuvin, I might have expected that every bacillus tuberculosis contained in the sections would be colored brown. But my faith in Koch's directions was so great at that time as to regard the keeping of the sections in the solution of vesuvin for not less than fifteen minutes as the proper test for distinguishing the bacillus tuberculosis from other bacteria. When, in the spring of 1883, I had succeeded in perfectly staining this organism by the superior methods of Ehrlich and Gibbes, and by continued practice gained some

experience in the staining of bacteria, I recognized the causes of my former failure. But, being at this time familiar with the appearance of the genuine bacillus tuberculosis of Koch, and remembering that its discovery had been effected by means of the original method of staining of this investigator, I resolved to inquire, at some convenient time, once more into the merits of this method of staining. Accordingly, during the spring of 1884, I put a number of very thin sections of tuberculous lung containing, as I knew from previous stainings with Gibbes' solution of magenta, considerable numbers of bacilli tuberculosis, in Koch's original alkaline solution of methyl blue, and, after having left them there for twenty-four hours, transferred them to a concentrated watery solution of vesuvin. Already, after the lapse of a few minutes, these sections had assumed a dark, dirty, greenish-brown color, which, resisting the action of water or alcohol, had rendered them unfit for examination. As there exist some differences in the aniline preparations, even in those of the same color, and especially in the blue, I came to the conclusion that my methyl blue was not of the same kind as that which Koch had used for his staining, and therefore I made, according to Koch's formula, a fresh solution which I colored with methyl violet. But instead of leaving the sections twenty-four hours in this staining fluid I warmed the latter, such as Koch had also recommended. When perfectly stained the sections were transferred to a concentrated watery solution of vesuvin, in which, however, they were only left three minutes. After their removal from the latter solution they were washed in water, then successively treated with absolute alcohol and oil of cloves, in order to be finally mounted in Canada balsam. The subsequent microscopical examination showed but a very few blue colored bacilli tuberculosis in the sections; the rest had become in-

visible by having absorbed the vesuvin and thus assumed the same color as the tissue in which they were buried. Therefore, then, I stained another set of sections with the same solution, which, however, had been rendered somewhat stronger by the addition of a little more methyl violet. After having been stained in this solution, the sections were washed in water, and individually treated with the solution of vesuvin. In doing so, I first left each section half a minute in the solution of vesuvin after which it was washed in water and then, for about half a minute, put in alcohol for the purpose of removing that portion of the vesuvin which in all Canada balsam mountings is removed from the sections by the action of absolute alcohol and oil of cloves, with which they are previously treated. From the alcohol the sections were then taken, immersed in water and examined by the aid of a strong loupe, in order to ascertain whether some of the blue staining was still remaining. When this was the case the section was replaced in the solution of vesuvin for one-fourth or one-half minute longer, until, with the exception of a few small bluish spots, it was colored brown throughout. The microscopical examinations of these sections, after mounting in Canada balsam, showed that these bluish spots were produced by numerous bacilli tuberculosis, stained blue by the methyl violet. The same results were obtained when, instead of the sections, tuberculous sputum was stained by this method.

The above described experiments with Koch's original bacteria staining fluid conclusively showed me that the bacillus tuberculosis has no claim for the specific property of successfully resisting the displacement of one aniline color, which it had once absorbed, if subsequently exposed to another color. I can not forbear to think, therefore, that I might, perhaps, have been more successful in my first attempts to stain the

bacillus tuberculosis by Koch's original method, in 1882, if I had not so closely followed his own directions; though I do not mean to imply that these directions were entirely wrong, as it is possible that the vesuvin which Koch used for his staining may have differed from that which I obtained, by being less soluble in water.

The original method of Koch for staining bacteria by alkaline liquids has been, to the extent of my knowledge, generally abandoned on account of its being inferior to other methods, particularly to those of Ehrlich and Gibbes. The methyl violet and vesuvin, also, are, for the want of sufficient transparency, inferior to magenta followed by chrysoidin or Bismarck brown, and therefore not suited for accurate research. Nor is the methyl violet sufficiently durable, for when the sections, stained by Koch's method, as above described, were re-examined about two weeks afterwards under the microscope, it was found that the bacilli had completely faded; the methyl violet, by which they had been stained, was observed to be diffused throughout all the surrounding tissue.

The bacillus tuberculosis, as is now generally known, may be successfully stained by other methods and staining liquids, described by various authors. A number of these I have used myself, but as they all have been commented on by other writers, I shall confine my further remarks on the subject of staining these bacilli to those particular methods which I have finally preferred for my investigations. Of these I may first mention the original method of Ehrlich, in which the aniline oil plays a prominent part. The bacillus tuberculosis, especially when present in tuberculous expectoration, may be successfully stained by Ehrlich's original staining fluid; if there is any disadvantage attending the

staining with this fluid, it is its want of permanency, as the bacilli stained by it are liable to fade soon afterward. It is for this reason that I prefer, especially for staining sections of tuberculous tissue, the staining fluid recommended by Gibbes, which in reality is a modification of Ehrlich's, but which, by the alcohol it contains, is capable of holding a greater quantity of aniline oil in solution, while at the same time it is rendered stronger by containing more of the aniline color. This fluid saturates, so to say, the bacteria with color, and thus postpones their fading to a more distant time; for, as far as I am able to judge by experience, the permanency of the staining is proportionate to the quantity of coloring material absorbed by the bacteria. As regards the particular aniline color to be used for the staining, I prefer the magenta, though I have also had very good results with the hydrochloride of rosaniline, or with the methyl violet. While the rosaniline, however, is too light a color for being readily distinguished under the microscope, especially when the organisms are deeply buried in the tissues, the methyl violet has the disadvantage of being not sufficiently transparent and of being too easily dissolved by the absolute alcohol used for dehydrating the sections before mounting in Canada balsam. Thus is may happen that the organisms, though well stained by the methyl violet at first, may appear but faintly or not at all stained after being mounted in Canada balsam. The magenta, therefore, being sufficiently transparent and, from all I know, one of the most stable of the aniline colors generally used, is more suitable for an accurate study of the bacillus tuberculosis and for a permanent mounting of the sections. For the purpose in view, however, it must be of the best quality. The kind which I use is recog-

nized by its solution presenting a purple color, while another inferior kind presents a more scarlet red. The bacilli tuberculosis stained with the former solution present, also, when examined with daylight, a purple color, while those stained with the latter—that is if stained at all—appear more of a scarlet red.

Though I have generally preferred Gibbes' solution for the staining of my sections, I have not always used it in its original strength. In its full strength, such as is expressed by the original formula, this solution is intended for staining the bacillus tuberculosis in a comparatively very short time, according to Gibbes' directions in one-half hour. With this solution the bacteria, whether contained in tuberculous expectoration or in tuberculous tissues, may be very readily stained, for which reason it is very convenient in many cases. In order, however, to stain the bacillus tuberculosis, especially when contained in tuberculous tissues, in a more thorough and permanent manner, I have found it of greater advantage to leave the sections for a longer time in the staining fluid. But as Gibbes' solution, made after the original formula, contains rather too much of the magenta for this purpose, I have, for the staining of my sections, reduced it in strength by taking only one-half of the quantity of magenta put down in the formula. In this modified staining fluid of Gibbes the sections may be left for twenty hours, or even longer. If the weather is very warm, it may happen that during this time the solution is rendered stronger by the evaporation of the alcohol, and that a surplus of the aniline color is found to adhere to the sections, while these, themselves, appear somewhat shrunk in their extent. In cold weather the staining fluid containing the sections may, on the contrary, be slightly

warmed on a sand-bath, until a delicate vapor is observed to arise from the surface of the fluid, after which the flame is extinguished, and the sections left to cool off with the sand. When the sections are removed from the staining fluid, they are put in distilled water and left there as long as it will remove any surplus aniline color contained in them; they will then appear soft and pliable and not diminished in size. But if, as I have already remarked, too much of the aniline color—in the present case the magenta—is found to adhere to the sections, while they themselves have shrunk in size, no attempt should be made to put them in this condition in the nitric acid solution for the purpose of discoloring them, as this solution is not capable of removing entirely the surplus aniline, nor of rendering the section again soft and pliable, or of making it expand to its original size. The sections, when in this condition, should be placed in alcohol, which easily removes the surplus of the aniline color without injuring the tissues; as soon, however, as this surplus is removed, perhaps in one-half or one minute, they are transferred from the alcohol into distilled water, in which they will be found to expand to their original size, and from which they may now be transferred to the solution of nitric acid.

In treating the sections with the solution of nitric acid—one part of the acid to two parts of water—as first recommended by Ehrlich, some caution has to be observed, for the reason that, if left too long a time in this solution, the nitric acid will in most cases not only remove the stain of the aniline color from the animal tissues, but also from the bacilli tuberculosis. For my own part, I generally leave the sections in the nitric acid solution *only as long* as they are ob-

served to emit a brown precipitate. As soon as the formation of this precipitate ceases, I quickly transfer the sections from the nitric acid solution to the water, in which they may be noticed to part with some of the magenta previously absorbed and which here presents a purple tint. If the sections are now transferred to clean water and made to rest on a white ground, they still appear colored to a certain extent by the magenta, so that one might be tempted to treat them once more with the nitric acid solution, until they are completely discolored. The error committed in pursuing this course, however, becomes evident by taking into consideration that the absolute alcohol, to the action of which the sections must be necessarily exposed in order to be rendered fit for being mounted in Canada balsam, always dissolves and removes a certain part of the aniline color left in the sections by the nitric acid solution. In most cases, therefore, in which the sections have been completely discolored by the nitric acid, very few or no bacilli will be detected in them after being mounted in Canada balsam.

But as it is desirable to know, before mounting the sections in Canada balsam, whether they may be expected to contain stained bacilli tuberculosis, I expose them at once, and before they are stained with the second color, to the action of alcohol. If after this process the sections still show purplish spots, when examined upon a white ground in water, we may be sure of the presence of stained bacilli and, moreover, that they will no more be discolored by the subsequent action of absolute alcohol, to which they must necessarily be exposed before they can be mounted in Canada balsam. The same course is pursued after the sections

have been stained with the second aniline color, be it chrysoidin or Bismarck brown, for, as in the case of magenta, a part of these colors is also lost by the action of the absolute alcohol; while in observing the precaution just mentioned the sections, if not sufficiently stained, may without much inconvenience be replaced in one or the other of these colors, in order to absorb them to the proper degree. For staining the tissues of the sections I prefer Bismarck brown or chrysoidin, for the reason that they are more transparent than vesuvin or methyl blue and therefore better suited for special studies of the bacillus tuberculosis; besides the contrast formed by these colors with the magenta purple of the bacilli is quite sufficient for readily distinguishing these organisms from the tissues containing them. As the length of time for the sections to remain in Bismarck brown or any other color depends, of course, on the strength of the solution it, is difficult to fix exact rules on this point. Each student engaged in the study of tuberculous sections, therefore, should himself determine the time with the aid of his watch, by removing and replacing at certain intervals of time the sections from the staining fluid in order to wash and examine them in water, until the are sufficiently stained; if they remain too long in this fluid the bacilli will, in most instances, also be colored brown.

In the foregoing description of the method which I have generally pursued in staining the bacillus tuberculosis in sections of tuberculous tissues, I have only mentioned the nitric acid solution for decolorizing the animal tissues of these sections. Although this solution answers very well the purpose in view, there is, nevertheless, a considerable disadvantage associated with its action, consisting in the

contraction or shrinking of the sections, which renders them less fit for histological studies. In order to avoid this shrinking of the tissues I have had, in many instances, recourse to one of the other agents known to dissolve the aniline color, contained in the fluid, quite as well as the nitric acid. Of these agents I have particularly made use of the formic acid, first recommended, if I remember rightly, by Watson Cheyne. This acid removes the magenta only from the animal tissues, without in the least degree affecting the stained bacilli; the sections, therefore, can be left in it for several minutes without fear of discoloring them too much; the principal advanage in using this acid, however, is that it does not cause the animal tissues to shrink.

With the modification of Gibbes' solution and in the manner described above I have now not only successfully stained many hundreds of sections of the tuberculous tissue and of specimens of tuberculous expectoration, but also various kinds of liquids and infusions containing other bacteria, as, for instance, those met with in urine. The bacteria contained in these liquids were stained as thoroughly as the bacilli tuberculosis. They have retained their color remarkably well, as in some of my preparations, which were stained two years ago, they can still be distinctly seen. The bacilli tuberculosis contained in sections of tuberculous tissue, if thoroughly stained with the magenta solution will also retain the color a long time, almost for a year or even longer.

The bacteria contained in urine or other liquids may be very easily stained in the following manner: a drop of the liquid is put upon a cover-glass and then left to evaporate upon a sand-bath; upon this one or more drops are suc-

cessively applied and dried in the same manner, until the organic matters contained in the liquid are sufficiently thick for the purpose of staining. But as the stratum thus formed by these matters does not protect the bacteria enclosed within from the action of the nitric acid solution to such an extent as the animal tissues of a section of some tuberculous organ protect the bacilli tuberculosis therein, the cover-glass holding the stratum should be exposed to the action of the nitric acid solution but for a very short time, as otherwise the latter will destroy the aniline color previously absorbed by the bacteria.

Before closing my remarks on the process of staining the bacillus tuberculosis I must point to some important facts which relate to the staining of some of the individual anatomical elements of the tuberculous tissues, and to which I will have occasion to refer when discussing in the following pages my observations on the nature and origin of the bacillus tuberculosis.

At present it appears to be generally known that in the different individual anatomical elements, of which all animal tissues are composed, there exists a considerable difference in the capacity of absorbing coloring matters, such as carmine, hæmatoxylin, etc.; it is thus that the protoplasm of the nuclei absorbs the coloring matter of a staining fluid more readily than that of the cells themselves. This difference in the degree of absorbing coloring materials may also be observed when a tissue passes from a normal into a pathological condition, a phenomenon to which I have already referred several years ago. Thus the protoplasm of an animal cell or that of its nucleus will absorb and retain the coloring material much better when in a state of irritation

than when in its normal condition. The same may be said of neoplastic cells absorbing better than the normal cells of old tissues; accordingly in staining a section of a cancerous organ the cancer cells will be found more highly stained than those of the neighbouring healthy tissue. Pathological products, such as fibrinous exudates, the albuminous cylinders met with in the urine of cases of parenchymatous nephritis, etc., also absorb coloring matter in a high degree. In staining with aniline colors vegetable or animal tissues, similar differences are observed in the anatomical elements of these tissues, not only in the degree of power for absorbing the colors, but moreover in that for retaining them. Such an instance we observe in the staining of tuberculous tissues in which the vegetable organisms, the bacteria, retain one aniline color if once thoroughly absorbed better than the animal tissues against a second color subsequently presented to them, while the latter on their part possess a greater power of absorption. Next to the bacteria, it is the nuclei of the tubercle cells which hold the aniline color, once absorbed, against the action of the nitric acid solution, or formic acid, alcohol, etc., as well as against a second color presented to them. This phenomenon manifested by the nuclei of the neoplastic tubercle cells is so constantly observed in sections of tuberculous tissues as to become a reliable test between these nuclei and those of the neighboring normal cells. This difference in the power of retaining the aniline color, however, is not only observed to exist between the nuclei of the tubercle and those of the normal cells, but, moreover, between the nuclei of the individual tubercle cells themselves. In a section of a tubercle, stained with magenta, and discolored with nitric acid solu-

tion or formic acid, therefore, a number of nuclei will always be observed to have more or less retained the magenta, while others have lost it. The retention of the staining material by these nuclei indicates the state of irritation which generally precedes that of degeneration. As soon, however, as the nuclei commence to degenerate, their absorbing power diminishes in a degree corresponding to that of the degenerating process, to be lost entirely with the final disintegration of the nuclear protoplasm.

Although the nuclei of the tubercle cells, when in a state of irritation, hold the magenta which they have absorbed against the action of the nitric acid solution, formic acid, etc., they never do it in the same degree as the bacilli tuberculosis. This is readily seen by comparing the particular tint of the magenta which the nuclei present with that of the bacilli tuberculosis; for while the latter, when thoroughly stained and examined microscopically with a daylight illumination, present a distinct purplish color, the former appear not only paler but also of a more reddish tint.

The foregoing remarks concerning the capacity of the nuclei of the tubercle cells to hold, when in a certain condition, the magenta absorbed against the action of nitric or formic acid, I have principally made for directing already in this place the attention of the reader to these facts upon which, as I shall show hereafter, the interpretation of certain phenomena relating to the origin and nature of the bacillus tuberculosis in human organs is based.

III.

THE MORPHOLOGICAL CHARACTERS OF THE BACILLUS TUBERCULOSIS.

In order to fully understand my observations regarding the origin and the development of the so-called bacillus tuberculosis met with in human organs and its relationship to the tubercles, the reader should be familiar with the morphological character of this organism, such as they have appeared to me in the course of my microscopical investigations.

In the study of the morphological characters of the bacillus tuberculosis it is important that these organisms should not be obscured by the substance in which they are found embedded. For this reason thoroughly stained specimens of tuberculosis expectoration containing the bacilli are preferable to sections of tuberculosis lung or other organs; though these, if very thin, also answer the purpose. In examining such a specimen of sputum containing numerous bacilli tuberculosis it will be found that they represent shorter or longer filaments which are distinctly composed of minute granules (fig. 1, *a* and *b*). The number of the latter being proportionate to the length of the filament, ranges from two to six, seldom more. While some of these filaments are straight, others, perhaps the greater number, appear slightly curved, presenting in many instances one or two angular bends. In examining, especially on the longer filaments, these curves and bends a little more closely, it will be found that in most instances they occur between two neighboring pairs of granules, suggesting the idea that the whole filament is composed of pairs of granules or diplococci (Billroth). In some instances the original building up of the filaments by diplococci is very striking (fig. 1) and cannot be mistaken. The same angular bends may

even be observed on some of the shorter filaments composed only of two diplococci; sometimes even one diplococcus appears to overlap the other (fig. 1, *b*). These angular bends appear to indicate the place where two diplococci have formed a junction by mutual attraction.

Now as regards this apparent building up of the filaments of the bacillus tuberculosis by so-called diplococci, we may point to the fact that all sphero-bacteria or micrococci, such as they are met with in various natural liquids, are artificial infusions when they appear in the form of filaments, are in the same manner built up of pairs of minute cells. Generally these filaments are formed of only two diplococci, comprising two granules; not infrequently, however, the latter by joining one another give rise to shorter or longer chains, of which they themselves represent the individual joints. The building up of these chains by micrococcus filaments and of the latter by diplococci may be easily observed in that form of bacteria generally met with in urine (fig. 2, *a*).

In many specimens of tuberculous expectoration (fig. 1, *a*), but particularly in sections of tubercles undergoing the cheesy metamorphosis or so-called coagulation necrosis (figs. 4, 5, 8 and 9), the bacillus tuberculosis presents itself in the form of groups composed of a larger or smaller number of filaments, which, differing in length, frequently overlie one another in different directions. This peculiar grouping has been mentioned by other authors, but to the extent of my knowledge none of them have ever offered a satisfactory explanation for this phenomenon. As the manner in which these groups of bacilli tuberculosis are formed stands in a certain relation with other facts elicited in my investigations, I shall postpone the remarks which I have to make on this subject to another part of the treatise.

The particular appearance which these minute cells, composing the filaments of the bacilli tuberculosis, present to the eye of the observer, differs, as I have observed, with the degree of intensity of their staining. Thus, if they are highly stained, they will appear to adhere closely to, or be fused with, one another more than is in reality the case. Such an appearance may be caused by a surplus of aniline color deposited in the constrictions existing between the individual cells. For this reason it is quite essential for an accurate study of this mutual relationship of these minute cells or granules, that they should be only moderately stained, as represented in fig. 1, *b*, and, moreover, with a suitable transparent staining material; besides, they should not be too much covered by the purulent matter of the expectoration or by the substance of the tubercles. Examined under such favorable circumstances, then, these granules will hardly ever be found completely fused or exhibiting the straight outlines of a so-called "rod;" even those which form diplococci do not appear completely fused with one another, but in all instances still show their original spherical form, separated by a more or less distinct constriction. The individual diploccoci, forming the filament, however, generally appear not fused into one another (fig. 1, *b*.) A close examination of these minute granules will, furthermore, show that they do not all present one and the same diameter; on the contrary, whilst some of them appear slightly larger than the mean diameter, amounting to about 1-1500 mm., others are smaller. The latter very probably represent young cells or granules, formed by the division of larger ones. It is thus that the smallest cells are always observed at one of the ends of the filaments, where, in many instances, instead of a two-celled diploccocus, three cells will be met with. In some filaments, on the other hand, one of the

terminal cells may be seen slightly enlarged and presenting a more oval form. This enlargement and change of form precedes, as I presume, the act of division, and therefore cannot be looked upon as an approach to the bacillus form of a bacterium. In fact, among the many thousands of these filaments which I have closely examined, I have never been able to discover a single one without constrictions, that is, representing the rod-like form of a true bacillus. On the contrary, in every instance, even in those filaments in which the minute cells or granules appear as if fused, I have succeeded in dissolving the minute spherical bodies of which they were originally composed. Examined with my Tolles' homogeneous immersion objective, illuminated with very oblique light, the outlines of these granules are distinctly seen projecting in bas-relief from the filaments.

The facts which I have stated above show, then, that the bacillus tuberculosis, such as it is met with in the human lungs, or other organs, does not present the slightest trace of the bacillus form of a bacterium. A true bacillus, according to Cohn's definition, represents, as I have stated before, a rod without constrictions. Whenever a bacillus divides, the divisions are rectangular, and not preceded by a constriction of the part where the division is to take place. The bacillus subtilis, or hay bacillus, represents a fair type of the bacillus form. This organism is easily obtained from a decoction of hay. In staining a drop of this decoction upon the cover glass with a solution of methyl violet, the bacilli, contained in the former, will readily absorb the aniline color from the liquid, and then show very distinctly the rectangular divisions, which in unstained specimens appear very faintly. It will, furthermore, be found that these marks of division greatly differ from the constrictions which the bacillus tuberculosis represents. Koch

has, as far as I know, never mentioned these constrictions and the head-like character or torula-form of his bacillus tuberculosis. On the contrary, he describes the latter as a minute rod (Stæbchen), and, accordingly, regards it as belonging to that group of bacteria formed by the bacilli. The fact of the bacillus tuberculosis being composed of minute granules was first pointed out by Gibbes, several months after Koch's announcement of his discovery. Taking, therefore, into consideration the disadvantages attending Koch's original mode of staining with his alkaline fluid, of which I have spoken before, I am not disinclined to believe that when he first discovered these filaments he was unaware of their torula-form character; if otherwise, I could not comprehend for what special reason he applied the designation "bacillus" to these torula-form organisms, unless he places this designation upon the presence of spores which he stated to have discovered within the filaments. In mentioning these spores in his first paper on the subject, he expresses himself as follows:* "Under certain circumstances, to be mentioned hereafter, the bacilli form already in the animal body spores, of which the individual bacilli contain several, mostly from 2 to 4; they are oval in form and d stributed at equal distances throughout the length of the bacillus."

As far as I can understand these words, they imply that the bacillus, throughout the length of which the spores are distributed at equal distances, represents a rod, and not a row of minute cells. Or did Koch, when placing the organism which he discovered in the tuberculous tissue among the bacilli, perhaps regard the individual minute cells or granules forming the filaments as individual joints of the bacillus? The spore then should be contained in these spherical joints. Or

* Berliner Klinische Wochenschrift, April 10th, 1882, p. 222.

again, are the minute cells themselves regarded as the spores? If so, then I may repeat the question which I have asked once before: Where is the body of the bacillus? For though it is possible that these minute cells, forming the filament, called "bacillus tuberculosis," may, like other micrococcus forms of bacteria, possess a gelatinous envelope, I have never seen them enclosed in a distinct sheath which might represent the wall of the original bacillus. Besides, these cells or granules are mostly spherical, and not oval, as Koch describes his spores; and, moreover, if they represented the spores, then, as there are not special rods to be seen, it would appear as if the bacillus tuberculosis were constantly sporing. Hence, there remains nothing else to presume but that the oval spores mentioned by Koch should be contained in the minute cells of the filament.

Ever since I have become familiar with the veritable bacillus tuberculosis, of Koch, I have sought in vain in various treatises written on this subject for a clear, definite description of the spores, as well as of the bacillus-rod containing them. To the extent of my knowledge there are only a few authors, who have themselves practically investigated the subject under discussion who have mentioned these spores. On account of certain discrepancies existing in their descriptions, as well as for the wants of clearness of expression, however, I have failed to derive the proper satisfaction from the sources. Thus, for instance, Watson Cheyne, who has investigated the nature of the bacillus tuberculosis on an extensive scale, expresses himself as follows*: "The tubercle bacilli vary considerably in length, the longest being about the $\frac{1}{7000}$ inch. They are

* Watson Cheyne "Reports to the Association of the Advancement of Medicine by research on the relation of Micro-organisms to Tuberculosis." Reprinted in New York Medical Abstract, May, 1883, p. 175.

narrow (about $\frac{1}{5}$ or $\frac{1}{6}$ of their length), more or less rounded at the ends, and they generally present a sort of leaded appearance, clear spots with intermediate stained parts, the rod outside the clear spots being also stained (Plate 1, Fig. 10.) The number of leads in a single rod varies from four to eight, average six. The rods are generally straight, but not uncommonly more or less covered. In tissue they are generally found singly, sometimes in pairs, united at their ends or stuck together side by side. At other times there are two or three lying across each other, the axis of all being more or less in the same direction. In cultivations they are, as a rule, shorter, and stuck together in dense masses. Perhaps their shortness is due to their being broken when spread out on the glass, but I think they are really shorter when growing slowly. (Vide examination of Koch's case of injection into the veins). According to Koch they are motionless." The foregoing quotation from Cheyne's paper represents all that this author at the time says of the morphological characters of the bacillus tuberculosis. While he says nothing of spores, he, nevertheless, mentions the leaded appearance of the organism, and, moreover, "clear spots with intermediate stained parts, the rod outside the clear spots being also stained." In considering the great extent of Cheyne's investigations into the nature of the bacillus tuberculosis, his description of the organism itself is rather meagre. Besides, his expression regarding the clear spots is somewhat obscure, for while he speaks of stained parts intermediate to the clear spots, he finishes the sentence by saying that the rod outside the clear spots is also stained. As far as I am able to understand the last part of the sentence, it is a repetition of the preceding, as otherwise these words might indicate that the stained parts "intermediate to the clear spots" were not identical with the

"rod outside the clear spots." In the above description there is nothing said to the effect that these clear spots represented the spores of the bacillus tuberculosis, though I am inclined to think that the author may have regard them as such, but not being sure of their nature, has hesitated to make any positive assertions. In the same vague manner Formad also speaks of these spores, so that it almost appears as if these authors had been trying to avoid to enter into a more definite description of these bodies.

Two other distinguished authors who also quite extensively investigated the subject under discussion are Messrs. Rabes and Cornil. In order to show certain discrepancies found in the descriptions of the spores of the bacillus tuberculosis, as rendered by different authors, I shall exhibit the view of these investigators by quoting some parts of their description of the morphological characters of the organism in question, as follows:* "They (the bacilli) consist sometimes of small homogeneous rods (batonnets), sometimes of small ovoid or rounded granules placed side by side. They are difficult to see without a coloring re-agent. Nevertheless, in sputa which contain a great number of them, when treated with a weak solution of potassa they are recognized as small hyaline and colorless rods, in which no distinct granules are seen. These small rods then appear larger than in the preparations where they have been colored and dehydrated." A little farther on in the same paragraph the authors continue: "In examining with the No. 10 homogeneous immersion of Verick and the concentrator of Abbé a preparation of phthisical sputum, colored by Ehrlich's method, a larger or smaller number of small rods of various length and form are seen, distinctly alike in diame-

* *Rabes* et *Cornil.*—"Note sur les Bacilles de la Tuberculose," and "Journal de l'Anatomie et de la Physiologie normales et pathologique de l'Homme et des Animaux." Juillet, Aout, 1883, p. 456.

ter, some of them homogeneous, colored aniline red or slightly violet, the others formed throughout their whole length by small colored granules. In the sputa of one of our patients, the lungs of which were hollowed out by large cavities, a considerable quantity of bacilli was met with, about one hundred in the field of the microscope with an amplification of 500 diameters. The greater part of these small rods contained small granules placed side by side. We have left this sputa in a tube closed by a cork for three weeks. These sputa, under the influence of putrefaction, had lost their mucus consistence. The colored preparations have then shown to us that almost all the bacilli were solely composed of small colored granules; and they have appeared to us more numerous than in the sputa examined immediately after expectoration. We have drawn (see fig. 12, plate XXIV.) these bacteria left to themselves in the sputa during ten days. It can be seen that the greater part among them are composed of slightly elongated or spherical granules, arranged side by side. In examining closely one of these bacilli with the aid of the homogeneous immersion objective No. 10, and with a high ocular, the borders of the small rods, which are rectilinear and parallel, may be distinctly determined, and it is seen that the colored granules, which probably are spores, are seated in the interior of the small rod."*

*I cannot forbear to remark that it is impossible to form a correct idea of the morphological characters of the bacillus tuberculosis from those bacilli represented in figure 12, plate XXIII, to which the authors refer in their text. For although this figure is marked in their "Explanation" of the plates as magnified 1000 diameters, the bacilli are represented therein not larger than those in figure 10 on the same plate, marked as magnified only 150 diameters. The granules of the true bacillus tuberculosis when magnified 1000 diameters, present a diameter at least three times as large as represented in the above mentioned figure. The latter, therefore, has missed its purpose of illustrating the morphological characters of the bacillus tuberculosis.

Two years afterwards, in a lecture delivered by Cornil on Pulmonary Tuberculosis,* this investigator makes the following remarks: "The typical bacilli of tuberculosis, as observed in sputum and lung sections colored by Ehrlich's method, appear entirely homogeneous, or formed of small beads adhearing end to end."

"These small beads are considered the spores of bacilli more through analogy with other bacteria than by a true demonstration. We do not know, however, whether this parasite found in tubercular products be not the offspring of parents having an entirely different morphological appearance," etc.

These words are clear enough to show that at present this author also entertains some doubts as to the existence of the so-called spores of the bacillus tuberculosis, he admits even that they never had been truly demonstrated.

The best information concerning the spores of the bacillus tuberculosis which I have thus far obtained, was from a review written by Litten on the "Ætiology of Tuberculosis," by Koch, published in the "Mittheilungen aus dem Kaiserl. Gesundheitsamt." In order to render my arguments on this subject clearer to the reader, I shall quote from this condensed account on the ætiology of tuberculosis the part which treats of these spores, found on page 262 of the "Deutsche Medizinalzeitung," March 24th, 1884. It reads as follows: "A further *very important property of the tubercle bacilli is the formation of spores.*" It was Koch who first observed the appearance of shining bodies in hay-

**New Orleans Medical and Surgical Journal.*—A lecture by Dr. Cornil, Prof. of Pathological Anatomy, etc., Paris. Reported by Dr. E. Laplace, of New Orleans, Sept. 1885.

bacilli, which remain after the disintegration of the bacilli and are capable of germinating anew into bacilli. For the latter reason Cohn regarded them as the fruit-form of the bacilli, and designated them spores. Tinged with aniline colors these bacilli appear in the microscopic picture with short articulations, mostly consisting of two articles of which the single ones are darkly colored throughout, still resembling bacilli free from spores. In many articles, however, the appearance of a light spot is observed, which gradually increases in size while the colored contents of the article are more and more retracted to both ends, and while the sides are only still bounded by fine lines representing the outlines of the article. The light space in the interior of the bacillus article is *the spore*, which is not distinguished by its lustre but by its remaining free from coloring matters. The articulation, of course, does not always appear so sharply defined in opposition to one another as in the bacilli pictured by Koch upon the photograms (No. 76 of volume I). In many varieties of bacilli, as, for instance, in those of splenic fever, the articles appear closely opposed to one another and form a continuous thread which contains the uncolored spores at equal distances. The formation of spores in the tubercle bacilli takes place in the same way. The mutual connections of the latter remain preserved and they do not break up into single articles, but in each article a light body is formed so that the bacillus, after being stained, resembles a dark minute thread, interrupted by light egg-shaped places. With the use of the strongest systems and a considerable amplification, it may be ascertained that the spore containing bacillus presents, only on a smaller scale, the same picture as the spore-containing bacillus of splenic

fever. The spores are egg-shaped and bordered on their margins by a fine colored line, while their number amounts from 2 to 6 in a single bacillus. As every single spore occupies an article the number of the articles of the bacillus, that is the simple elements of which the latter is constructed, may be inferred from the number of spores. When a substance with spore-containing tubercle-bacilli is examined in a feebly refractive liquid medium the bacilli appear then provided with highly lustrous bodies; accordingly the latter cannot be vacuoles or simple empty spaces contained in the protoplasm of the bacillus, but must represent genuine spores. Upon the accompanying figures of the spore-containing tubercle-bacilli the latter, in order to represent the spores, had to be drawn larger than they in reality appeared by the respective amplification used."

If I understand the meaning of the preceding quotation correctly, Koch describes his bacillus tuberculosis as presenting the form of a true rod, in which, as the writer of the review expresses himself, "the mutual connection of the articles of which the bacillus is composed remains preserved." The rods do not "break up into single articles, but in each article a clear body is formed, so that the bacillus, when stained, resembles a minute dark thread, interrupted by light egg-shaped spaces." He futhermore states that the bacillus tuberculosis, when containing spores, presents the same picture, only on a smaller scale than the spore-containing bacillus anthracis. Now, as far as I know, and as all drawings of the latter—Koch's own "Untersuchungen ueber die Ætiologie der Wundinfections Krankheiten" (fig. 4, 13 and 14) included—show, the articles of this bacillus are characterized by square ends and do not repre-

sent spherical bodies. In the same manner has Koch represented in the form of a rod the bacilli he discovered in the blood of septicæmic mice as well as those he met with in the erysipelatous ear of a rabbit (l. c. figs. 1, 2, 3 and 12). This difference of form shows plainly that the bacillus tuberculosis *does not* present on a smaller scale the same picture as the bacillus anthracis.

During the whole course of my investigations into the nature of the bacillus tuberculosis I have closely examined the beaded filaments representing it, with the view of discovering the oval spores in the individual cells of the latter, —presuming, of course, that these cells represented the individual cells of the bacillus,—but my efforts made in this direction have been in vain. My examinations, as I have already stated before, were made under the most favorable circumstances,—that is, with Tolles' 1–10 homogeneous immersion objective, Abbé's illuminator, and the finest daylight that can be obtained from a clear southern sky. To these advantages, however, some one might perhaps raise the objection of my objective not being sufficiently high in magnifying power for discovering the clear oval spaces representing the spores in these minute cells. My reply to such an objection would be that the correction of this objective is so perfect as to render it capable of bearing not only the eye-piece B, but even C, without any more loss of definition than that caused by the loss of penetration attending all high eye-piecing. The amplification, however, obtained with my eye-piece B, as may be judged from my figures of the bacillus tuberculosis accompanying this paper, is more than sufficient to show any clear unstained oval spot or space in the cells of the stained filaments, if really contained

therein. A still higher amplification, without much loss of definition, I might obtain by making use of my Tolles' amplifier. But no advantage is gained in making these examinations with very high powers, for the reason that too much penetrative power is lost by the shortness of the focus of the latter to clearly distinguish the unstained spores in the interior of the minute cells of the bacillus.

Not having been able, then, to discover anything in the form of a spore in the granular filaments of the bacilli tuberculosis, met with in the tuberculous organs and sputa of man, and not feeling inclined to disregard the statements of Koch, I can only presume that the spores which this investigator describes he must have observed in those filaments of bacilli tuberculosis which he obtained by his artificial cultivations in nutritive substances, differing in their nature, of course, from the tubercular substances of the human body. That higher forms of bacteria are really obtained in this manner, has been proved by the researches of Buchner, Zopf and others.

Before closing my remarks on the morphological characters of the bacillus tuberculosis, I cannot forbear to point to the want of correspondence existing in the description of the spores of this bacillus given by different authors. In the passage which I have quoted above from the writings from Koch and Rabes and Cornil on the subject, the reader may, perhaps, already have noticed that this want of correspondence is very great; for while the former regards the granules or minute cells as individual articles of his bacillus tuberculosis in which the spores are contained in the form of *clear, unstained oval bodies*, the latter look upon the *stained cells themselves* as representing the spores, enclosed by the protoplasm of the

bacillus. In the first case *the spores do not absorb the staining material*, but remain uncolored and clear in the stained wall of the bacillus—article, in the other the minute cells—which Koch regards as composing the whole body of the bacillus,—are regarded to represent only the spores, and *to be capable of absorbing the staining material*, while the body of the rod—as far as I am able to interpret the meaning of the words of the authors—*remains unstained.*

Watson Cheyne, as may be gathered from the passage concerning the morphology of the bacillus tuberculosis, and which I have above quoted from his writings, speaks, like Koch, of *clear spots* with intermediate stained parts, but, as I have already pointed out before, obscures the meaning of his words by adding that the rod outside of the clear spots is also stained. In examining the illustrations accompanying his paper, however, it will be found that the filaments of the bacillus tuberculosis represented as magnified 2350 diameters in figure 15, do neither show "clear spots" nor "stained rods" outside of these spots.*

Although I have seen in a number of papers these spots of the bacillus tuberculosis mentioned as "clear spots" enclosed in a stained rod, I have never seen them distinctly represented among the illustrative figures accompanying some of these papers but in one instance; I refer to figures illustrating a reprint; also in the *New York Medical Record*, of a paper on "Gram's Method of Staining applied to Pneumonic and Tuberculous Sputum," by M. Afanassiew. Fig. 5 of this paper represents some tuberculous sputum stained by Gram's method

*In referring to the illustrations of Watson Cheyne's paper, I of course take for granted that those accompanying the reprint of his paper in the "New York Medical Abstract," and which I have before me, are correct copies of the original.

and containing numerous bacilli tuberculosis, among which several rods are observed which contain a number of clear, unstained spots or spaces in their interior. As these rods, however, are quite conspicuous among the other ordinary bacilli filaments by being of a greater thickness than these, it appears to me strange that I should never have observed them among the thousands of bacilli tuberculosis contained in the very numerous preparations of stained sputa which I have hitherto examined. But having no reason to suppose that Afanassiew drew these spore-containing rods in his paper without having actually seen them, I am almost inclined to regard them as belonging to another species of bacillus and their presence in this specimen of sputum as accidental.

Besides the discrepancies met with in different descriptions of the spores of the bacillus tuberculosis—some of which I have quoted above—there are other reasons for doubting the real existence of these spores. Thus, we might point to the comparative rarity of the presence of single granules among the hundreds of bacilli tuberculosis filaments contained in a minute portion of tuberculosis sputum or in a thin section of tuberculous lung. For if these spores did really exist in the so-called rod of the bacillus tuberculosis—it matters not whether in the form of Koch's clear, egg-shaped, *unstained* spaces or in the form of Rabes' and Cornil's *stained* granules—they would, in either case, eventually be liberated from the rod and appear among the other bacillus filaments in the form of cocci, and as, according to the views of the above named authors, each bacillus filament, or rod, either contains or represents these spores, they should be present in great numbers in each preparation of tuberculous sputum or lung. This, however, is not the case, for although some cocci forms may be observed in most preparations, they are too few in num-

ber to account for a general sporing of all the filaments contained therein.

In closing my remarks on the morphology of the bacillus tuberculosis I may, therefore, repeat that in the tissue of man, at least, I have never met with this organism in the form of a spore-containing rod, but always in the form of a filament composed of minute granules, or cells, and multiplying as it appears by a division of the latter. But as this filament represents morphologically a so called *sphero-bacterium*, I shall follow Zopf in calling it henceforth the "*bacterium tuberculosis.*"

(*To be continued.*)

AN INAUGURAL THESIS.*—SOME MODIFICATIONS TO THE ORDINARY METHODS OF TREATING TRANSVERSE FRACTURES OF THE PATELLA. *By* GEORGE A. STAPLES, A. M., M. D., *of Dubuque, Iowa.*

A communication made by M. Richelot† in 1883 to the Société de Chirurgie, of Paris, relative to the comparatively frequent casualties arising from treating transverse fractures of the patella by opening the knee joint and suturing the fragments, has awakened, especially among French surgeons, a reaction against this method of treatment, although it is advocated by the great surgeon Lister. In our own country Dr. J. A. Wyeth,‡ who has collated nineteen cases thus treated, with three deaths, has also protested against the operation; but it is probably true that the majority of Modern operators coincide with the views of Lister,§ as expressed in his paper

* For the degree of Doctor in Medicine.

†Contribution a l'etude des suites des fractures, de la rotule, etc. These de Paris, '84. Par H. Labouin.

‡Med. Record, 1882, No. 22, p. 596; and ibid., 1885, Nov. 21, page 581.

§London Lancet, Nov. 3, 1883.

before the London Medical Society, and regard the measures therein set forth as a great advance in surgery. Stimulated by the fact that three cases of transverse fracture of the patella have recently come under my observation, and noticing the conflicting views as regards treatment of that fracture, I was led to study somewhat the literature of the subject, and I present below the results of that study.

The causes of separation of the fragments in the fractures in question are, first, the action of the quadriceps extensor muscle, and, second, the effusion into the joint.

Gulliver* has shown that, when the tendinous expansion of the quadriceps covering the patella is torn, the fragments can be separated 4 2-10 lines. If the diastasis is greater, the fibrous capsule must be split on both sides. Malgaigne,* by experiments on cadavera, obtained like results, and Girdner† found that if he cut only the covering of the patella, a diastasis of no more than ½ to ¾ of an inch could be attained, but if he cut freely into the capsule the fragments could be pulled apart three inches.

If, now, a fracture occurs, and the fibrous covering and capsule of the patella be torn on both sides to a greater or less extent, the upper fragment is drawn up by a contraction of the quadriceps; it will also be drawn somewhat outward by the contraction of the vastus externus,‡ this muscle being relatively very strong. Retraction of the ligamentum patellæ will also pull the lower fragment somewhat downward.

As stated above, the second cause of the diastasis is intra-articular effusion. This fact was noted by Malgaigne§ and the

*A. Hentzolt. Ueber die Behandlung, der subcutanen Querfracturen der Patella, etc., p. 8.

†Hamilton. Fracture of the Patella, p. 90.

‡Harrison Allen. Human Anatomy, Section III., p. 308.

§Hentzolt, loc. cit.

English surgeons of the last century, and various means were adopted to get rid of the effusion. Flajani* in 1786 employed revulsives for that purpose. Thos. Castle† applied an evaporating lotion of white wash and used leeches till the tension subsided. Of late years cold and compression (Ravoth) and vesication (M. M. Guyon and Gosselin) have been strongly advocated.

The latest investigations of Riedel, and the clinical observations of Volkmann, Kocher and Langenbuch, show that absorption of this effusion does not take place quickly, and that retention of blood clots in the joint creates a chronic hydrarthrosis, that, in its turn, helps to keep the fragments asunder.

Riedel,‡ by experiments on dogs, found that complete absorption generally took place within two months. But in dogs the clotting of the effused blood does not seem to hinder the absorption materially, while the reverse is true in man. Langenbuch§ did not succeed, moreover, in aspirating the hemarthrosis twenty-four hours after the injury, because the blood had already clotted. Lücke had the same experience. Secher and Volkmann,‖ three days after the accident, found the blood already coagulated. If cases have been recorded where the effusion remained fluid from six to eight days, it should not be inferred that it will stay in this fluid state, for a part will certainly clot, and the clots may persist for a long time. Volkmann¶ observed fourteen weeks after an

*Du Traitement des Fractures Transversales de la rotule, etc. These de Paris, 1884. Par C. Divernesse.

†Castle. Manual of Surgery, Lord, 1834. p. 394.

‡Deutsche Zeitschrift Chir. Bd. XII.

§Langenbuch. Zehr. Congr. der Deutscher Gesellschaft fur Chirurgie.

‖Volkmann. Centralblatt fur Chir. 1880. Nr. 10.

¶Hentzolt, loc. cit.

injury a large mass of clots remaining in the joint, and the same thing was seen by Hentzolt * at the expiration of a half year. Jarjavay, in 1861, first evacuated the effusion in the knee-joint. He was followed by Voillemier and Broca.* In 1872 M. Dubrueil* thus operated on a case and the operation was followed by death. This fact being reported to the Société de Chirurgie of Paris, that body condemned this therapeutic measure for the relief of the effusion.

In Germany, Volkmann† first made the articular puncture, removing the fluid two days later with a syringe. The fragments were thus drawn together by plaster strips and held by a plaster of Paris bandage. In eight weeks he thus obtained a strong bony or fibrous union.

Schede,‡ besides immediately aspirating the joint, syringed out the cavity with a three per cent. carbolic acid solution. The wound was then covered with protective silk, on which he placed salicylated cotton. Five cases were thus treated by him with an excellent result in each. Jourowski, in 1878, reported several cases in which good results were obtained by removal of the effusion. Marcy and Cok recommend the operation, but not the antiseptic injection; Kocher § is of the same opinion for the reason that phenic intoxication might occur.

M. Poinsot|| after gleaning from literature the accounts of nine cases in which the fluid was evacuated under antiseptic precautions (the fatal case reported by M. Dubrueil occurring

*Archives Generales de Medicine. Mars. 1884. Ad. Jalaguier, Revue Critique.

†Hentzolt, loc. cit.

‡Schede Centralblatt fur Chirurgie. 1877. p. 657.

§Kocher. Centralblatt fur Chirurgie. 1880.

||Poinsot. Revue de Chirurgie, 10 Janvier, 1882, p. 52.

anterior to the use of antiseptics), concludes that the procedure is comparatively harmless, and that, because of the ease with which it allows the fragments to be approximated, it should be employed as soon as possible after the injury. M. Jalaguier, in a very interesting article, remarks that since the work of M. Poinsot has been published, aspiration has steadily gained ground among French surgeons; and recently the Société de Chirurgie of Paris has publicly reversed its judgment of 1872. The change of opinion is well expressed by M. Trélat* in the following words: "To-day I puncture joints that are full of blood, and, nevertheless, in the discussion of 1872 I publicly combatted the practice, declaring that I would prefer a large opening of the joint. My change of opinion is the result of the introduction of the antiseptic method into surgical practice." In England, where arthrotomy with bony suture has aroused such important discussions, it seems that the question of puncture to evacuate the effusion has been left a little in the shade. The operation, though, in that country has its earnest partisans, particularly Mr. C. Heath† and Mr. Hutchinson, who regard the effusion as the chief cause of the diastasis.

Its strongest advocates are the German surgeons. Hentzolt says: "Experience to date speaks in every case in its favor, since this procedure, carried out with the strictest antiseptic precautions is completely harmless." Volkmann, Schede,‡ Secher, Rinne,§ and Lücke express similar opinions. Marcy‖ also supports the operation, basing his advocacy on a large

*Jalaguier, loc. cit.

†N. T. Med. Record, May 31, 1884.

‡Schede. Centralblatt fur Ch. 1877. No. 42.

§Rinne. Centralblatt fur Ch. 1877. No 49 and 50.

‖Marcy. Centralblatt fur Ch. 1880. No. 27.

experience; he operated 124 times upon 75 different knee joints, affected from the most varied causes, with but one bad result.

It seems fairly proven that puncture of the joint, properly carried out, is an innocent operation; since, therefore, it is assuredly undeniable that the persistence of a large quantity of blood in the synovial sac must exercise a harmful influence on the synoval membrane, and since, by the state of distension in which it places the joint, it cannot but hinder the approximation of the fragments, it appears the part of wisdom to evacuate the intra-articular effusion as soon as the patient is seen.

In the treatment of transverse fractures of the patella the custom has long been to flex the thigh upon the body and to extend the knee, thereby securing relaxation of the triceps. Valentin* first recognized this principle and proposed elevation of the extremity. Astley Cooper† proposed that the patient take a half-sitting posture with the foot elevated and leg extended. Langenbeck and others keep the patient in bed and let the extended limb lie flat on a pillow. Coster‡ placed the limb on a plane inclined from the foot to the trunk, so that the limb thus raised formed with the axis of the body an angle of about 45°. R. Liston§ recommends extension by a straight splint extending from a little below the tuberosity of the ischium below the middle of the leg. The method of Valentin, with slight flexion at the hip, is generally preferred, as it is more suitable for long use. An appropriate position in many cases is competent to effect firm union. It can certainly be competent if the lateral parts of the capsula are not

*Hentzolt, loc. cit. p. 14.

†A. Cooper. Treatise on Dislocations and Fractures. p. 207.

‡Coster. Manual of Surg. Operations. Phil., 1825.

§R. Liston. Elements of Surgery. Phil., 1837.

much torn, and there is little separation. It is better first to empty the effusion by aspiration. Prof. v. Wahl,* of Dorpat, in '83 treated in this way an old woman, 60 years of age, where the separation of the fragments was not great. The joint was twice punctured under the spray; the wound was irrigated with a bi-chloride of mercury solution, and dressed with iodoform dressings. Simple elevation of the limb was practiced. The result was perfect.

Warren,† of Boston, earnestly champions treatment by position, in the following words: "Transverse fracture of the patella, attended, as it often is, by great separation of the fragments, may be most successfully treated by position alone." He also believes that the limb does better lying flat in bed than when elevated.

In this connection the writer begs leave to report the following case. A boy, aged nineteen, while tending a saw in a sawmill, was thrown violently, by the giving way of the machinery, against a heavy stick of timber. The accident occured Aug. 11, 1883. Two days later he was brought to Dubuque, when Dr. Jas. M. Boothby, was summoned. The writer, in company with the doctor, saw the patient. A fracture of the left patella, transversely, the fragments being separated somewhat over an inch, was discovered. A temporary dressing had been applied by a surgeon at the place where the patient had been injured.

The patient was at once placed in bed, his leg resting on an inclined plane. Little dressing, because of the tenderness of the joint, could be applied. The boy was discharged, well, on Oct. 10th, there then being but a slight fissure perceptible be-

*Hentzolt, loc. cit. p. 15.

†Warren. Surgical Observations. Boston. 1867. p. 322.

tween the fragments. He, when last seen, on Feb. 1, 1885, has perfect use of the limb.

Coaptation of the fragments may, broadly speaking, be obtained by the direct or indirect method. To the former plan belong the various kinds of sutures, and usually as a prelude to arthrotomy; to the latter plan belong the different means employed without penetrating the skin and the many apparatuses applied after a preliminary rupture of the integument. I purpose only to consider those forms of indirect coaptation that leave the skin intact.

Malgaigne divided the dressings known at his time into four groups: (*a*) those exercising circular pressure, and more or less surrounding the patella; (*b*) those exercising parallel pressure, operating upon each fragment, while working transversely upon the axis of the limb; (*c*) those exerting concentric pressure, pressing from above downwards and from below upwards upon the circumference of each fragment, and (*d*) those that press only upon the upper fragment. Malgaigne expressess his opinion of them all in these words: "If there is an incontrovertible fact in surgery, it is the incompetency of these (the dressings) in the attainment of a regular and firm union." He explains this by the fact that the patella has no prominences sufficient to furnish points of support to the dressings, and that it is difficult to press down the quadriceps and ligamentum patellæ enough to make two furrows in which the straps can rest. Even if the dressing has been applied firmly the fragments dip posteriorly and the fractured surfaces bulge forward from each other. The idea that the swelling of the joint militates against true approximation, and that the surgeon in some way

should allay this, does not seem to have occurred to Malgaigne.

It is interesting to note that simple extension by means of gutter splints is recommended by Paul of Egina.*

These fractures were treated by circular pressure by Albucassis* toward the end of the fourth century. He applied a splint with a fenestrum for the patella. This was firmly held by a bandage. The splint was afterwards replaced by a ring of leather, and the leather in its turn by twisted wire. Parallel pressure was first made by Muschenbrok,† a mechanic of Leyden. His apparatus, as modified by Arnaud, consisted of a posterior hollow splint of tin, the sides of which were pierced with holes, and of two broad concave crescents that were placed, the one above, the other below the patella. The crescents were fastened to the posterior splint with screws.

Concentric pressure was first used by Lavanguyon about 1680. The apparatuses were modified by Ravaton and Petit.*

Pressure acting solely on the upper fragment was first employed by Petit about 1770.†

The method of Astley Cooper‡ was to well bandage the extremity, and just above and below the patella to take several circular turns; strong bands were fastened laterally to these turns and their free ends tied in such a manner that the fragments could be drawn together. Later, Cooper substituted leather rings for the bandage and straps, with buckles for the lateral bands. Unfortunately, a bulging for-

* Divermesse, loc. cit.

† Hentzolt, loc. cit.

‡ Cooper, loc. cit.

ward of the fractured surfaces could not be prevented by this dressing. Boyer attempted, therefore, to remedy this defect by direct pressure over the fracture, and constructed an apparatus of which Malgaigne said: "It unites great strength with great simplicity." Boyer placed the limb in a well padded wooden splint bearing nails opposite the joint; to these nails he attached straps extending over and under the patella; over the knee-cap he then laid a compress moistened with a resolving fluid, and confined it by a roller.

Sansom* applies long strips of plaster reaching from the middle of the thigh over the fracture to the middle of the leg, and just over the fracture he makes a loop of 8–10 inches. Rollers are then placed as braces to the plaster and the loop twisted by a stick.

Castle† recommends, after extension, that a well padded splint be applied with the patient in the sitting posture; that a leather strap be buckled around the thigh, above the fracture, and from this that another strap be passed beneath the foot, the latter being raised. The strap is then brought up on the other side of the knee and buckled to the circular strap above the joint.

Woodman‡ employes two gutta percha splints, that, while yet warm, are fitted anteriorly and posteriorly. After they have hardened he cuts a fenestrum for the patella in the anterior splint. Rollers are then passed around both.

The dressings of Burge,§ Lonsdale,‖ Lansdale,‖ Beach,‖ Pelikan‖ and Wechler‖ are similar in principle to the appa-

* Hentzolt, loc. cit.

† Castle, loc. cit.

‡ Woodman, Medical Times and Gazette, Aug. 20, 1870.

§ N. Y. Med. Record, Apr. 15, 1868.

‖ Hentzolt, loc. cit., p. 21.

ratus of Muschenbook, and exclude bandages. Burge applies well fitting sole leather splints, to which are attached extension weights. Pelikan uses pads above and below the patella, and a third of circular shape to press down the fragments from above.

It is unnecessary to go through the whole list of known dressings, some of them seeming to be of little value. It is of slight importance of what material the dressing consists, or whether, instead of the two concave plates of the Arnaud apparatus, smaller concentric or horse-shoe-shaped plates are chosen, and whether these are padded or not.

Immovable dressings, such as the starched bandage of Sentin, the dextrine bandage of Velpeau, or that of liquid silex were, earlier in the century, approved by many. Of late years plaster of Paris is much used, but it can only bring about a good result if the intra-articular effusion is removed (Heath). If this is not done the dressing must be often changed,—an unpleasant operation.

Much ingenuity has been exercised by American surgeons in the treatment of this fracture; the dressings of Agnew,* Hamilton and others are well known and popular. The plan of Prof. Hamilton,† approved by Prof. Gross,‡ as it was employed in the two cases described below, that came under my own observation, deserves especial notice.

It consists of a single inclined plane, long enough to support the thigh and leg, and about six inches wider than the limb at the knee. The plane is well padded and the member laid thereon, care being taken that the space under

* Agnew, Surgery, vol. I., p. 974.

† Hamilton, Fractures and Dislocations, p. 447.

‡ Gross, System of Surgery, vol. II, p. 211.

the knee is well filled. Then a sort of testudo genu with a figure of eight plaster bandage and roller is placed over the patella, first approximating the fragments as well as possible.

Finally the whole limb is fastened to the splint by a second roller, reaching from the ankle to the groin. In the cases to be described, the only modification made was that the posterior splint was somewhat guttered and a light anterior one was added.

On July 13th, 1881, P. K., a brakeman, while getting on a train moving at the rate of ten miles an hour, struck his right patella on a bolt while the leg was somewhat flexed. He said that there was a loud snap and he felt as if shot. As he recovered himself he could feel that the knee-cap was injured, as, to use his language, "the upper piece stood out straight." Being a vigorous man, about twenty years old, he walked a short distance, dragging the injured member along. A temporary dressing was applied by a surgeon at Lansing, Iowa. The next day the patient was brought to Dubuque, where he was seen by Dr. G. M. Staples and the writer. The Hamilton dressing modified, as spoken of above, was put on, the fragments being separated one and a half inches. He was kept in bed and the wound regularly dressed. On Nov. 1st, patient went to work again, there being but a slight furrow noticeable. Flexion and extension were not good, and if the patient slipped slightly he noticed that the joint became painful and swollen.

On June 13th, 1883, while the patient was getting off a slowly moving car he stepped on a piece of wood and turned his right foot. He felt the patella snap and was at once disabled. When the writer saw him there was considerable swelling of the joint and the fragments were separated at least

two inches. The same treatment was given him as before, and without any noteworthy trouble he could get about on Oct. 1st. His leg, though, was very weak, for he could not walk a long distance. For a short walk the leg was strong enough. There was a diastasis of about half an inch. In December of 1883, while descending some steps, the patient slipped and fractured the patella a third time, the separation being about one and a half inches. He did not call a surgeon, but dressed it himself and kept quiet but a short time. As the leg became useless he came under the charge of Dr. G. M. Staples, who kept the patient in bed for a month with the Hamilton dressing, and then freshened the edges of the patella fragments with a drill pressed through the integument. This was done on May 7th, 1884. The patient got about for the first time on July 28th, with the leg stronger than it has been since the first injury.

Whenever the patient slips, the leg is apt to be strained, and swell and be tender for a few days. He can now flex the leg to about a right angle with the thigh, and extend it fairly well. The knee cannot endure the cold, and he protects it with a silk cap and chamois skin. The diastasis has increased, being 2¾ inches when the limb is extended, and 4 inches when it it flexed. But the member seems to increase in usefulness every day. There is some muscular atrophy. Two inches below the patella the circumference of the right leg is 14 inches, of the left 14⅛ inches; four inches above the patella the circumference of the right leg is 15 inches, that of the left leg 15¾ inches.

I cannot find in literature any cases exactly similar to the above. At the Société Medicale de Reims, Séance du 16 Janvier, 1884, M. Langlet* showed a patient who had twice

*Union Medicale et Scientifique du Nord-Est., 15 Mai, 1884.

fractured his patella, the second time evidently by muscular action. The two fragments were separated the breadth of four fingers, but the patient could use the limb well if the knee was first bandaged.

A man, F. H., forty years of age, while passing over a frozen surface, slipped and fell, striking his right knee. He was brought disabled to the office of Dr. G. M. Staples, where he was seen by the writer. There was a transverse fracture of the patella, the fragments being separated about an inch. The accident occurred on Dec. 31, 1884. The leg was dressed as in the former case, and the patient sent home; he was then placed on his back in bed and the limb elevated. On Jan. 3, 1885, the wound was dressed, and atrophy of the quadriceps determined. Four inches above the patella the right leg measured 15¾ inches in circumference, the left at the same point 16 inches; while two inches below the patella the girth of the right leg was 12½ inches, that of the left 13 inches. The patient has to-day, March 31st, 1886, regained power in the leg every week, there being slight atrophy of the quadriceps, and apparently a strong fibrous union.

In his recent work on surgery Prof. Agnew* gives three indications for treatment of transverse fracture of the patella: first, to place the limb in that position which will secure the most complete relaxation of the quadriceps; second, to bring together and so retain the parts of the fractured bone, and third, to prevent anchylosis. In the concluding portion of this paper I purpose to discuss another indication, seemingly of first importance, but which, so far as I know, has not been noticed by English or American surgeons. That indication is to so treat the quadriceps as to avoid atrophy and degeneration of its structure.

* Agnew, loc. cit.

There is a certain amount of impotence that regularly follows these fractures; in some cases this seems due to a stiffness of the joint, in other cases to a certain flabbiness of the member. The latter condition is most frequent, and therefore, most important. It will be found that the patient cannot walk well, but is easily fatigued. Whether this state is due to the nature of the callus, to the length of the callus, or to muscular atrophy, is a most interesting and important question. Mobility of the fragments, want of nutritive elements in the lower fragment, the presence of synovial fluid mixing with the exudate of the callus, and poor coaptation have each been urged as a reason for non-bony union. Each probably has some influence, and, as the experience of Lister has shown, defective coaptation plays a considerable part. But as the following case proves, the chances of a bony union are as good with a simple dressing as with section or the hooks of Malgaigne.

In June, 1883, a patient entered the service of M. Lancereaux,* at la Pitié, for pulmonary tuberculosis; while there he fell upon the floor and fractured his patella. M. Gilsen, interne, applied a posterior splint and bandaged the extremity. On the fifteenth day the dressing was taken off and the patient left in bed. Five months later he died of phthisis.

At the autopsy the patella was found with its volume and dimensions normal. Two transverse fissures marked the spots where two fractures had occurred. There was a bony callus so firm that the point of a bistoury broke against it. M. Verneuil presented the specimen to the Société de Chirurgie. But a fibrous callus, if short and thick, is as good as a bony one; certain surgeons, according to Berger,† even prefer it, dreading the anchylosis that may come with a bony union.

* Labonne, loc. cit.

† Berger. Dict. Encycloped. des Sciences Med., T. V., p. 295.

Therefore, non-bony union cannot explain the impotence of the member, and the question is natural, why two patients with union of the fragments apparently similar, as has been noted, get about, nevertheless, in a very different way.

Valtât* some time ago remarked that muscular atrophy is provoked by arthritis; but in connection with fractures of the patella it has been but recently noted. In 1880 and 1881 M. Verneuil gave several clinical lectures on the subject at la Pitié. Before his time the impotence of the leg had been ascribed to the separation of the fragments.

Nélaton, in 1844, stated that the impotence was proportionate to the length of the fibrous ligament between the fragments. Malgaigne, in 1848, published a similar view.

Follin, in 1868, attributed the difficulty of locomotion to weakness of the extensors, the fibrous callus not offering the same leverage that a bony one would.

M. Gosselin† speaks several times of the loss in volume of the thigh muscles after fracture of the patella, as, he says, occurs in most muscles after fractures. But agreeing with Nélaton and Malgaigne, he ascribes the impotence to fibrous union or a long callus.

M. P. Berger‡ repeats the same doctrines. He says that the weakness of the leg is the result of persistent separation of the fragments over 1 ctm.; that the loss of power indicates the loss or partial abolition of the function of the quadriceps, but it is because the muscle cannot act efficiently upon the fragment of the patella.

On the other hand, M. Verneuil thinks that the chief factor in loss of power of the limb is atrophy of the quad-

* Labonne, loc. cit.

† Clinique Chir.—Gosselin.

‡ Berger, loc. cit.

riceps, particularly of the middle portion, the rectus femoris. Whether arthritis is present or not, atrophy comes on, usually very soon; two days after the injury it may be determined by measurement, comparing the one with the other limb. Flaccidity and softness of the tissues on palpation also are quickly found.

It has been stated above that atrophy usually occurs after arthritis. Fracture of the patella is almost always followed by a more or less marked arthritis. But there are cases where that complication is wanting, or at least not evident, as in fractures from muscular action, and yet the atrophy of the thigh and leg muscles comes on as in cases of manifest arthritis.

M. Richelot* thus expresses himself:

"In weakening the member and abolishing its functions another factor, atrophy of the triceps (quadriceps), comes in. The muscle has indeed been seen to atrophy, and it has been said that because of defective union its degeneration impedes locomotion; but the true rôle of that degeneration has been misunderstood, for the reason that fractures of the patella, and their consequences, were studied long before the influence of diseases of the joints upon the neighboring muscles was known. To-day we know that an arthritis of the knee, slight or severe, is accompanied almost inevitably by atrophy of the quadriceps, showing itself in the first few days. The arthritis appears to be the result of a reflex pathological action. The lesion may be ephemeral, or last some time, and get well spontaneously by exercise of the leg. Sometimes, however, it is rebellious and persistent, and that without any relation between the gravity of the inflammation and that of the atrophy being established. But a fracture of the patella cannot happen without articular

* Richelot, Union Medicale, etc., 2nd Sept., 1882.

inflammation of variable intensity, and this cannot escape the laws that govern arthritis evoked by other causes.

"If I am not deceived, the lesion of which I speak is better fitted, with its varieties, than any other to explain the functional states so diversified that are left after fractures of the knee-pan. The patient gets about well when the atrophy is very little and disappears promptly. When it is more severe, and gets well of itself in a few months, the functions of a member, believed to be forever compromised by a vicious union, are re-established little by little against every hope, and in spite of the persistence of a pronounced separation."

In support of the above statements M. Richelot showed two patients. Placing his hand upon the hip of the first of these he asked him to extend his leg ; the patient could not do so, no contraction even with his greatest effort took place, and none was transmitted to the upper fragment, which would have happened if the diastasis had been the peccant cause. M. Richelot, moreover, demonstrated that the circumference of the sound thigh was 5 centimeters larger than that of the injured one, while there was but a slight diastasis of the fragments.

In the second patient exhibited, the fragments were separated a good inch ; the interposed callus was apparently of slight thickness and strength, for a deep fossa existed. It seemed as though the action of the rectus would scarcely be transmitted to the patellar ligament, and yet extension was easily made. The patient could readily raise his heel from the bed, and the wounded member was scarcely less vigorous than the sound one. When the hand was placed on the quadriceps, energetic contraction was felt when he was bidden to extend the leg, and the most careful measure-

ment could not find a difference of 1 ctm. in the circumference of the two thighs. Muscular atrophy, therefore, hardly existed.

M. Richelot therefore concludes that ingenuity employed to get the fragments in perfect coaptation is misspent, and that most of the manifold contrivances for that purpose should be laid to rest in the arsenal of surgery. To obviate the separation the most simple means are the best, and when after treatment of 30 to 40 days there is found a fibrous callus and movable fragments it is useless to prolong further repose and to condemn the patient to new attempts at coaptation. Attention must be given to the quadriceps, for when it regains its power the patient is cured.

The pathogeny of this atrophy is doubtful. Its cause is probably the arthritis, though M. Picqué* has collated cases of atrophy where marked arthritis did not exist. Whatever the cause, its seat is in the quadriceps, the rectus being first involved, and the rest of the muscle being gradually invaded. Faradic contractility is rapidly lost, either partially or entirely.

There is visible withering even to the eye, as observed in many cases by M. Petit. M. Labonne believes that this atrophy is the cause of the functional impotence that usually follows fractures of the patella, for the following reason: If union by fibrous callus leaves the leg impotent, and if at the same time muscular atrophy exists, it is difficult to tell the part that each plays. But if one of these two factors can be eliminated, and if the impotence disappears or persists, the true cause can be determined by induction. I cite a case in point.

*Picque. Reflexions Cliniques sur les fractures anciennes de la rotule.

A patient who had suffered from a fracture of the patella entered the service of M. Guyon. There was a fibrous callus 4 ctm. in length. Functional impotence was complete and considerable atrophy of the triceps with paralysis of that muscle was found. The muscle was treated by electricity for two months; in the beginning it did not contract at all under the influence of the current, but little by little contractions appeared, became more vigorous, and finally the patient could walk without a limp. Nay, more, the callus at first 4 ctm. in length, stretched to 6 ctm, though the cure was permanent. This case appears to demonstrate that the callus had nothing to do with the functional trouble and that its lengthening did not increase the infirmity so soon as the muscle had recovered its power. M. Larger* exhibited a patient with a callus 12 ctm. long who could walk almost without limping.

M. Picqué gives four observations of these fractures in laboring men with considerable diastasis in each. In two of these there was no atrophy of the quadriceps, in the two others a very slight withering of that muscle. They all had good use of the limb.

M. Guyon† had a case under his care where there was a diastasis of the flexed fragments of 7 ctm., with impotence of the member, that recovered perfectly under treatment by electricity. M. Labonne has collated 13 cases markedly similar to the above.

M. Badin,‡ reporting a fracture of the patella on his own person, stated that while the diastasis increased the func-

* Societe de Chirurgie de Paris. Nov. 1883.

† Labonne, loc. cit.

‡ Revue Medicale de Toulouse. Mai, 1884.

tions of the limb were regaining their power. Treatment by baths and massage had, in six weeks, reduced the difference in circumference between the healthy and injured thigh from 6 ctm. to nothing in some parts, to a single centimetre in others.

M. Guilliot,* commenting on another case in point, said: "That observation well shows how impotence is not in direct sequence to the separation of the fragments, but how it is due for the most part to atrophy of the quadriceps. In this patient the muscles of the thigh are generally little atrophied and still act in their movements by their insertions upon the inferior fragment of the patella and upon the tibia. This fact, then, endorses the opinions of MM. Richelot, Verneuil and Le Fort in the recent discussion in the Société de Chirurgie and condemns the practice of Lister, who makes primitive suture of the fragments."

In the case of P. K., described above, the patient stated that as the thigh gradually approached the other in size, although the separation continually became greater, the limb regained its power. In the case of F. H., the limb has also done well, there being little atrophy of the quadriceps. But the multiplication of examples, as have been given, though interesting, cannot make our case stronger. Besides causing impotence of the leg, M. Verneuil† accuses atrophy of the muscle of subjecting the patient to the danger of new fractures, either from falls or in the effort to avoid these. For when retraction has succeeded to atrophy the rectus becomes a solid, inextensible cord, capable of causing fracture easily. M. Labonne relates a case where the patient, suffering for two years from atrophy, fell to the ground without

* Societe Medicale de Reims-Seance du 16 Janvier, 1884.

† Societe de Chirurgie de Paris. Seance du 7 Nov., 1883.

striking his knee, and yet sustaining a transverse fracture of the patella.

As treatment for the atrophy, M. Verneuil advises, and has successfully employed, faradization. This is to be begun as soon as the traumatic pain has disappeared, and the fragments are maintained by a simple dressing. Each séance is to last five to ten minutes, and is to be given every two days. Faradization appears to act not only upon the muscle electrified, but even upon the nutrition of the member, as several observers, Prof. Le Fort among others, have noted. The muscles of the leg, as well as those of the thigh, even when only the triceps is thus treated, increase in size. When atrophy has existed a long time faradization is not efficient, and in such cases Dr. Ferras, of Paris,* employs with success the following means: a cold morning bath of twenty minutes, afternoon massage of the limb for half an hour, followed by a douche of luke-warm water.

CONCLUSIONS.

The treatment of transverse fractures of the patella should not be addressed to approximation of the fragments alone—this is but one end among others to be attained. A simple apparatus, such as the Hamilton dressing, is preferably to be employed, since it performs the same service that the suture does without the dangers. It is always better to relieve the articular effusion, when attempting to reduce the diastasis, by vesication or aspiration.

Functional impotence after these fractures is due in general to premature atrophy† of the quadriceps. Atrophy

* *Revue Med.*, de Toulouse, Mai, 1884.

† At the first French Surgical Congress (Paris, April, 1885), M. Richelot, speaking from a further experience, reaffirmed his views as to the importance of the quadriceps muscle in fractures of the patella.

is constant, but varies in degree. When it is marked, it usually succeeds pronounced arthritis. This atrophy should be combatted by electricity from the beginning.

EDITORIAL.

PHYSICIANS' PROTECTIVE ASSOCIATION.

Attention was called to the importance of establishing a PHYSICIANS' PROTECTIVE ASSOCIATION in an editorial appearing in the January number, 1885, of this JOURNAL. The note was suggested by an eminent surgeon, whose knowledge of the conditions of professional life in Chicago is adequate, and is worthy of reproduction at this time:

The object of the association is to protect physicians from groundless charges of malpractice. It is proposed that all physicians, interested in the subject, unite in the establishment of a fund for the defense, in cases of malpractice, and the election of a board of trustees to investigate individual cases, decide on their merits, and secure counsel. This matter is one of interest to every active medical practitioner, and no apology is demanded for calling the attention of the profession to the scheme before it has assumed definite proportions.

The advantages of such an association are obvious. The effect upon the community would be of the most salutary character. We have in Chicago all the conditions for the production of malpractice suits. It is scarcely necessary to direct attention to our large pauper population, native and foreign, the frequent occurrence of all forms of accidents,—in connection with the fabulous number of railroads that center in the city, and the numerous manufacturing industries,—the crowded

state of the legal profession. Within the past twelve months, ten or twelve suits for alleged malpractice have been instituted against as many reputable physicians by pauper patients, backed by irresponsible legal advisers. Not one charge was sustained. The physician, however, has in each case lost time and money, while his professional reputation has suffered from newspaper notoriety. It is an alarming fact that there is not a physician in Chicago of such eminence as to preclude the possibility of indictment for malpractice, at the instigation of a dispensary patient! An organization of the nature indicated would render irresponsible representatives of the legal profession less eager to share the "spoils" with pauper patients.

Such an association would have a favorable influence upon the profession. Medical gentlemen would be more charitable and truthful in their criticisms of the treatment of cases in regard to which they possessed no accurate information.

Many of the recent malpractice suits in Chicago have been instigated by the careless word of a brother practitioner, who had absolutely no knowledge as to the conditions of the case. When moral considerations do not restrain one practitioner from criticizing the treatment of a brother, the laws of the land render it criminal for him to utter a falsehood.

At a meeting of the CHICAGO MEDICAL SOCIETY, DR. EDMUND J. DOERING read an able paper upon the same subject, which elicited a spirited discussion. The weight of professional opinion, however, was in favor of a PROTECTIVE ASSOCIATION. Subsequently, timely and favorable editorials upon this topic have appeared in the *Journal of the American Medical Association*, January 30th, 1886, and the *Medical Record*, February 27th, 1886.

Now that the merits and demerits of the proposed association have been thoroughly discussed, it is time that a meeting of those interested in the movement shall be called.

IPSIS CONSUESCERE REBUS.

We earnestly hope that the suggestion with reference to the appointment of a Committee on Pathological Specimens, made to the CHICAGO MEDICAL SOCIETY by Professor Charles T. Parkes, on retiring from the presidency a few evenings since, will soon receive serious attention.

The importance "of acquainting ourselves, by means of our senses, with the forms, properties and changes of things, in order that the language we employ may, as far as possible, be employed INTUITIVELY," cannot be exaggerated. It is needful to bear in mind Bacon's advice—*ipsis consuescere rebus—to accustom ourselves to things themselves.*

The late PROFESSOR JEVONS was in the habit of emphasizing the following paragraph, taken from his "Lessons in Logic:"

"There is no worse habit for a student or reader to acquire than that of accepting words instead of a knowledge of things. It is perhaps worse than useless to read a work on natural history about Infusoria, Foraminifera, Rotifera and the like, if these names do not convey clear images to the mind. Nor can a student who has not witnessed experiments, and examined the substances with his own eyes, derive any considerable advantage from works on chemistry and natural philosophy, where he will meet with hundreds of new terms which would be to him mere empty and confusing signs."

The supply of material for pathologico-anatomical research in Chicago is ample. DR. ELBERT WING, Pathologist to the Cook County Hospital, has expressed his desire to place at the disposal of the SOCIETY the interesting specimens which are inspected at the dead-house.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 1st, 1886.—THE PRESIDENT, C. T. PARKES, M.D., in the chair.

DR. P. C. JENSEN read the first paper of the evening, entitled

DIGESTION AND DYSPEPSIA.

The author entered into an elaborate discussion of the physiological processes of digestion, the departure from normal, and the treatment of gastritis, ulcer of stomach and atonic and nervous dyspepsia. Owing to the length of the paper the author was obliged to omit a large portion of it.

DR. J. FRANK thought that in the diagnosis of stomach disease pain under the left shoulder would not be a pathognomonic sign in case any cardiac trouble co-existed. It is well known that patients with cardiac disease complain of pain under the left shoulder. He had found that the majority of cases of dyspepsia are due to dilatation of the stomach and diseases of the pancreas.

PROFESSOR C. C. P. SILVA spoke of the omission, among the cases enumerated by the paper, of that common form of indigestion due to the excessive use of tea or coffee, especially when the tea or coffee has been boiled for a long time and drank after all the aromatic principles have been evaporated and there is left only the tannic acid, which precipitates pepsin. This is one of the most frequent causes of indiges-

tion with ladies who abstain from cooking much and use only tea which is not freshly made, with bread and butter, taking such a lunch frequently.

DR. JENSEN, in concluding the discussion, said that he had found that in dyspeptic, as well as heart troubles, there is pain under the left shoulder. It is a symptom of dyspepsia when other affections can be excluded. As to dilatation of the stomach, it is often a cause of dyspepsia, and he had found it especially prevalent with beer drinkers who drink beer in large quantities, ten to twenty glasses a day. As to disease of the pancreas being a cause of dyspepsia, it is a very obscure organ and it is difficult to diagnosticate disease in it. In regard to long-drawn tea and coffee being an influential factor in the production of dyspepsia, he had observed that drinking too much liquid of any kind with the food has a very deleterious effect upon the digestion; reducing the quality of the gastric secretion, and thereby hindering the proper digestion of the food.

PROFESSOR J. H. ETHERIDGE read a report of

TWO UNIQUE CASES OF VESICO-VAGINAL FISTULA.

In the first case the bladder appeared to be torn across from side to side about 1½ inches from the meatus urinarius, and the "flap" thus liberated was hermetically sealed to the posterior wall of the vagina. The cervix uteri was completely surrounded with adventitious connective tissue, in whose meshes was retained menstrual fluid.

In the second case, following a very protracted, severe labour, wherein the forceps had been fruitlessly used, and twelve hours later delivery was allowed to be spontaneously accomplished, the most extraordinary results ensued. *The*

right ovary and uterus had completely disappeared by sloughing. The left ovary remained.

THE PRESIDENT said he thought it a well-established fact that there is a possibility of an accidental expulsion of the uterus and its appendages occurring in connection with labour. During the past year there has been quite a discussion on the question of whether it is possible for such a thing to happen, and so far as the extract published in the *British Medical Journal* goes, it seems to prove that cases do occur in which, as far as we know, no interference with forceps or otherwise was made, and yet there was extrusion of the uterus and its appendages, and sufficient constriction thereof to produce sloughing and entire loss of these organs.

DR. F. M. WELLER remembered a case in which rupture of the bladder into the vagina occurred, and the only cause to be observed was some gravel-stones found in the bladder. He had no doubt that they were the result of vesico-vaginal fistula.

DR. R. TILLEY inquired if he had asked the physicians who attended these cases if forceps were used?

PROFESSOR ETHERIDGE knew nothing of the antecedent histories of these patients. The first was a Bohemian woman who spoke German indifferently, and it was difficult to get her history. The second patient was an American-born girl, and she gave pretty succinct history of her experience. She was in labour forty-eight hours, consultation being called at the end of thirty-six. Instruments were tried but failed to deliver her, and the physicians gave it up and went home. Finally pains came on and expulsion of the pelvic contents took place.

DR. H. P. NEWMAN read a report of

A CASE OF RUPTURED OVARIAN CYST, WITH SPECIMENS.

Mary H., unmarried; occupation, housework; age, twenty-five; Norwegian. Since her first menstruation, at thirteen years of age, the menses have been regular but scanty, accompanied by severe pain, necessitating her lying in bed the first day of each period. After coming to this country, four years ago, she seemed to suffer less in this respect, and while not strong, enjoyed a fair degree of health. In September of last year she had a mild attack of typhoid fever, convalescing at the end of the second week. During October she gained rapidly in flesh, and experienced less pain than usual at the menstrual molimen, as he afterward learned. In the second week of November following she was taken ill with peritonitis. It was during this attack, which was of several weeks' duration in the subacute and localized form, that his attention was first called to any abnormal condition of the pelvic organs. The tenderness of the abdomen and pelvic viscera rendered a thorough exploration impossible, and it was not until January that a satisfactory examination was made.

The patient first came to his office January 25th, when he found a tumor extending upward and a little to the right of the median line, from the lesser pelvic basin to midway between the umbilicus and symphysis pubis, and corresponding in size and general outline to the gravid uterus at the fourth month. Further investigation revealed fluctuation in the tumor, also that it was detached from the uterus; the latter being crowded to the left and back into the hollow of the sacrum. Although the fluid contents were not examined, the growth was pronounced a probable cyst of the right ovary, and the patient so advised. To any operative procedure the patient demurred,

but promised to consider the matter and report at his office the following week. Nothing was heard from her until February 3rd, ten days later, when he was called to her house at about 6 P. M. He found the patient up, but complaining of pain and soreness of the abdomen, which was slightly tympanitic. Temperature 99½°, pulse slightly accelerated. With the use of an opiate and hot fomentations, the following morning he found her free from pain, with less tenderness over the abdomen, and no tympanitis. Pulse and temperature normal. He enjoined rest in bed, and directed that he should be called in case of further trouble.

On the night of February 6th he was summoned by the message that the patient was very low, and not expected to live through the night. He found the patient at 11 P. M. bolstered up in a chair, in a crouching attitude, with the thighs flexed upon the abdomen. The countenance bore such a pinched and anxious expression as gave striking evidence of grave peril. He was informed that following his visit on Thursday the patient had grown quite comfortable and free from pain, and contrary to his instructions sat up a large share of Friday. In the evening, while reading a letter, still sitting up in bed, she suddenly cried out that something had broken inside the abdomen. She suffered great distress, and was very much prostrated until 2 o'clock A. M., when she became more quiet. From this time she grew weaker, and had a very "bad feeling," as she described it, vomiting at intervals during the day, but suffering no particular pain. He was not called until late at night, twenty-four hours after the accident related. He found a rapid, feeble pulse of 140, skin moist, extremities cool, temperature 99° F., bowels tympanitic, but no pain, and little tenderness. She had passed no urine since the preceding night, and hardly a table-

spoonful of dark fluid could be obtained by the catheter. A digital and bimanual examination revealed no change in the consistency and general outline of the tumor, as far as could be ascertained through the distended abdomen.

The gravity of the situation was explained to the friends, and an exploratory operation insisted upon as the only hope. As immediate consent could not be obtained, he advised a consultation. He thereby met Dr. A. B. Strong at ten o'clock that morning. Through the stimulants which had been freely administered during the night, the condition of the woman remained much the same. Suppression of the urine was still a marked symptom, abdominal tympanitis somewhat increased, temperature normal. The possibility of ruptured pelvic abcess, or intestinal perforation from fæcal impaction was considered, the doctor concurring with me in urging an immediate operation. As soon as arrangements could be made the patient was etherized and placed upon a table. He requested Dr. Strong to perform the operation. The incision through the abdominal wall was about three inches in length, midway between umbilicus and pubis in the median line. As soon as the peritoneal sac was opened there poured forth about three pints of purulent fluid. When this had been washed away, the tumor was readily recognized, filling the entire hypogastrium, its peritoneal surface engorged and discolored by the existing inflammation. Owing to the extensive adhesions, it became necessary to carry the original incision upward and through the umbilicus to a point two inches beyond, and downward to the symphisis. The fundus of the tumor was firmly attached along the under surface of the mesentery, making it

necessary to ligate before removal; and, on closer inspection, a recently torn adhesion was observed, exposing a minute opening in the thinned wall of the sac, through which was oozing the purulent contents. In this connection it should be said that since her former attack of peritonitis the patient had complained of increasing pain on resuming the recumbent posture, a fact now easily accounted for by the extent and nature of the adhesions, which must have been thereby put upon the stretch. It is also probable that while sitting up in bed, movements of the body or abdominal viscera, together with the softening of adhesions by recent inflammation, had produced the rupture here found, and so perceptible to the patient. The complete separation of the remaining adhesions, and the removal of its growth with the right ovary and fallopian tube, was accomplished. The pedicle was tied with waxed silk, the ligature cut short and left within the pelvic cavity. All torn surfaces inclined to bleed were cauterized with a hot iron. The peritoneal cavity was washed out with hot water, dried with clean sponges, the wound closed, leaving a drainage tube in its lower angle, and the abdomen covered with antiseptic dressings.

Notwithstanding the free use of stimulants previously to the operation, and hypodermic injections of brandy toward its completion, within the next hour the woman's pulse became hardly perceptible at the wrist, and her immediate condition critical in the extreme. After the use of further injections of whisky and ammonia, and the application of bottles of hot water to the extremities, the patient rallied slightly and recognized those about her. From nine o'clock

in the evening, however, she gradually sank, and died at eleven P.M. The abdomen was opened the next morning by Dr. Strong and the writer. Though covered with recent exudations of lymph, the peritoneal surfaces were of a better color, nor had bleeding occurred from any of the points of detachment.

The tumor as here presented is a unilocular, dermoid cyst, its purulent contents, about a pint and a half, resembling very much the fluid found in the pelvic cavity. It also contained a mass of fatty substance bound together with a quantity of hair. The right fallopian tube here attached, was uniformly enlarged and held a number of drops of pus. The left ovary, which was removed post-mortem, also contained a few small cysts. The uterus was normal both in size and appearance.

The points of interest are: first, the disparity between the temperature noted and the extreme inflammatory changes in the peritoneal cavity; second, the difficulty in differentiating between rupture of this cyst and a possible pelvic abcess; also the resemblence of the symptoms to those observed in a case of twisted pedicle, as reported to the society by our President, Dr. Parkes, at a recent meeting; and third, the liability of rupture of ovarian cysts even of small size, where inflammation occurs, constitutes additional arguments in favor of early operations.

DR. A. B. STRONG said he believed it was generally supposed by the profession that peritonitis is always accompanied by an elevation of temperature as indicated by the thermometer. He had recently seen a case in which a large quantity of pus was removed by section from the abdomen

of a boy, in which the thermometer did not indicate any rise of temperature. These two cases seem to show that in purulent peritonitis the temperature is not always a practical aid in diagnosis, unless in a negative way.

THE PRESIDENT was inclined to think from some of the symptoms reported that this was a case of twisted pedicle, and that the rupture was caused by the twisting of the pedicle, which is quite often the result of the subsequent distension of the cyst walls: if it is weak at any point, it ruptures. Darkness in color is one noticeable change found in twisted pedicle, and if this was not a case of twisting, there was great resemblance in the symptoms and those of cases he had seen, viz., rapid distension of the abdomen, increased temperature, symptoms of peritonitis, and suppression of urine. In case the ruptured cyst was dependent upon twisted pedicle it might account for the separation of the adhesion, which was found. The mere fact of the movement of the body, which was advised against, might have precipitated a turn of the tumor upon itself, which led to the rupture by a diffusion of blood. He thought it a very interesting case and one calling attention to the necessity of insisting upon early interference in all cases where there is a supposed tumor of the abdomen, accompanied by the symptoms mentioned. And where the operation is done early there is very little difference in the fatality as compared with the operation done without peritonitis being present:

DR. NEWMAN said, in conclusion, that he did not think twisted pedicle was present in this case. The adhesions of the upper part and sides of the tumor were of such a nature that there could be but slight twisting of the base on the

pedicle, and if it had occurred as a factor in separating the adhesions it must have returned to its normal position again, for the tumor, when found, occupied its usual position.

DR. STRONG said he was sure the pedicle was not twisted. There were two points of attachment to the tumor, one adhering to the base of the mesentery on the right side, the other to the sigmoid flexure, both old adhesions, and the points of attachment so located that it would be impossible for the pedicle to be twisted.

THE PRESIDENT wished to know how the dark color was accounted for.

DR. STRONG said that it looked at first very much like a uterine tumor, being thick and vascular. It was a light mahogany color, but was not such a color as is found in a strangulated gut.

PROFESSOR J. H. ETHERIDGE said, in reference to the lack of correspondence between the temperature as indicated by the thermometer and a high degree of inflammation, that the temperature will often be found in cases of peritonitis to be sub-normal. In cases of gonorrhœa in the female, complicated by pelvic peritonitis, physicians are often misled by the fact that the inflammation which produces great pain in the abdomen is not accompanied by a temperature which would lead him to suppose that peritonitis is present, thus causing him to erroneously rule out the possibility of there being peritonitis.

DR. G. W. WEBSTER exhibited a convenient

CASE OF ANTIDOTES FOR POISONS, WITH STOMACH TUBE.

He said that in his limited experience in the treatment of patients who had taken poison, either accidentally or other-

wise, he had often found it difficult to procure the proper antidotes quickly enough and in a suitable form. It was this that led him to devise this case, intending at the time to have only one made for his own use. The case itself contains a pamphlet concerning poisons and their antidotes, a stomach tube, and the following drugs: ether, ammonia carbonate, nitrate of amyl, apomorphia, sulphate of atropia, brandy, camphor, animal charcoal, chloral hydrate, chloroform, digitaline, dialyzed iron, sulphate of iron, tr. of chloride of iron, mucilage, calcined magnesia, sulphate of morphia, iodide of potassium, liquor of potassæ, acetate of strychnia, chloride of sodium, sulphuric acid, tannic acid, sulphate of zinc. The atropia, morphia, apomorphia, strychnia and digitaline have been made up in compressed tablets and combined with soda so that they can be given hypodermically.

DR. J. FRANK exhibited a specimen of

DEGENERATED RIGHT KIDNEY,

with a brief history of the case. Thirteen weeks ago, lithotrity was attempted on a man sixty-nine years old. The lithotrite broke, and the next day lithotomy was performed. The patient did well for about three weeks when he seemed to fail again, and pus appeared in the urine. Then he got better, and the pus disappeared. But a relapse came and he died. During the time he was voiding pus, Dr. Frank had made microscopic examinations to find casts, but was unsuccessful. There was total degeneration of the medullary substance of the kidney exhibited, while the other was full of renal calculi.

THE PRESIDENT remarked that the degeneration of the

kidney was so great that tube cast formation would be impossible.

DR. R. TILLEY exhibited a sample of

LANOLIN

which he obtained through favor from Frazer & Co., of New York. He said lanolin has lately been brought prominently before the medical public by the researches of Professor Oscar Liebreich, of Berlin, and its clinical applications by Liebreich and others. The substance exhibited, you will observe, is of a yellowish-brown color, and of a plastic consistency. The upper layer is darker than that immediately beneath. Its odor is slight, but *sui generis*. Liebreich says it should smell like wool. It is found in practically all the keratine tissues of the animal economy, but the commercial article is undoubtedly obtained from wool. The sample he supposed to be a mixture of equal parts of pure lanolin and water. Liebreich calls it a cholesterin fat, that is, a substance composed of fatty acid and cholesterin. The more commonly recognized animal fats being, of course, compounds of fatty acids and glycerine. He promises later to give us its exact chemical composition. The special point of interest about it to us as physicians, is, that it seems to be absorbed by the integument with much greater facility than the substances now in general use as bases for ointments. In the *British Medical Journal* of Feb. 13, 1886, a number of formulæ are given, being so far the result of Professor Liebreich's observations as to the most convenient method of associating it with other substances. He there refers to several clinical cases of interest, psoriasis, favus, and eczema.

He regards it as an excellent base for blue ointment. He claims that when a small quantity of a sublimate ointment of 1 in 1,000 made with lanolin is rubbed on the skin, that in a few minutes the characteristic metallic taste of mercury appears in the mouth, and from this and other observations concludes that all toxic agents should be used, when associated with lanolin, with great caution.

Stated Meeting, March 15th, 1886.—THE PRESIDENT, C. T. PARKES, M. D., in the chair.

DR. ROBERT H. BABCOCK made remarks on

TWO CASES OF MITRAL STENOSIS,

with presentation of the patients.

DR. BABCOCK said that he did not intend to give any discussion of mitral stenosis, but merely desired to present a few points of interest in connection with these patients. Mitral obstruction is due to a fusing together of the valves so that they project into the ventricle in the form of a funnel, which, according to many authors, is the most frequent form of stenosis; according to others, the obstruction is due to a septum-like valve stretching across the opening, and called the diaphragmatic valve. Owing to the obstruction to the flow of blood from the auricle into the ventricle a murmur is produced, which is rolling or blubbering in character, and occurring during the auricular systole and previous to the systole of the ventricle, is called pre-systolic or auriculo-systolic. This murmur has been graphically represented by Balfour as in some cases resembling the sound of voot-rrrb.

the final t or b being the sudden, abrupt first sound produced by the ventricular systole.

In some cases no pre-systolic murmur, correctly speaking, is heard, only a diastolic murmur, which, being loudest at the apex in the mitral area, is a mitral-diastolic murmur. This murmur should be differentiated from the diastolic murmur of aortic regurgitation, which, in certain rare cases described by Balthazar Foster, has its maximum of intensity in the mitral area and not at the centre of the sternum.

In the two cases Dr. Babcock presented the murmurs differed from each other in character, in the one case the murmur being very distinctly represented by the letters voot, in the other by rrrb. The doctor was disappointed at the last moment by his inability to present a third patient, a man in whom the stenosis was indicated by a mitral-diastolic murmur which followed an impure first sound of heart, and both the impure first sound and the diastolic murmur were in this case audible at the lower angle of the left scapula. The propagation of the diastolic murmur so far to the left is very unusual; indeed, the production of the mitral-diastolic murmur is itself very rare, and is probably due to the fact that a rush of blood from the left auricle to the ventricle occurs with greater force at the beginning of the ventricular diastole than during the auricular systole, the auricle being dilated rather than hypertrophied, according to Sanson. The cases were then examined by members of the Society.

PROFESSOR E. C. DUDLEY reported a

UNIQUE CASE OF VESICO-VAGINAL FISTULA,

in which the entire vesico-vaginal septum, the vaginal portion of the cervix, and anterior wall of the cervix to the internal

os had sloughed away, leaving no bladder tissue between the inner extremities of the urethra and the points at which the vesico-uterine ligaments connect the bladder with the uterus. The only operation which seemed possible was to unite the posterior wall of the cervix uteri with the neck of the bladder. This would turn the uterus into the bladder and necessitate menstruation through the urethra. The anterior wall of the uterus could not be approximated to the neck of the bladder, but it was found, on further examination, that the mucous membrane of the bladder, if caught with the tenaculum about an inch in front of the uterus, could be drawn to the neck of the bladder and held without undue traction. The operator therefore undertook to close the fistula in this way by denuding a strip of the mucous membrane of the bladder from side to side an inch in front of the uterus, and thus he utilized that portion of the bladder between the line of denudation and the uterus, and made it a substitute for the lost anterior wall of the cervix and vesico-vaginal septum. Twenty-two silver wire sutures were employed after Sims's method. Union by first intention followed, notwithstanding the failure of the nurse the third day to keep the catheter *in situ*, which allowed several ounces of the urine to accumulate in the bladder. Notwithstanding the decrease in the size of the bladder necessitated by the operation, the patient experiences no difficulty in retaining the urine all night. The operator is not aware that another case of this kind has been previously reported.

THE PRESIDENT asked if it was not possible that some portion of the upper wall of the vagina was drawn upwards and backwards by the bladder, and what was taken to be a continuous wall of the bladder might be a part of the vagina. He

had seen a case where there was a large laceration into the bladder, and the opening seemed one cavity with continuous walls, but the flap thrown backwards was post-vaginal, and it was found that this flap could be drawn up and into its position.

PROFESSOR E. C. DUDLEY, in answer to questions, said that the loss of tissue at the base of the bladder from sloughing differs from that by incision. In the latter case the uterus would perhaps be included in the excised tissue, but it is seldom that a slough of the base of the bladder in the vesico-vaginal fistula, however extensive, destroys the connection between the bladder and kidneys. Even if the points through which the uterus penetrate the mucous coat of the bladder be lost, it is yet possible their openings into the bladder may be preserved, because the uterus penetrate the muscular coats nearly an inch from their normal points of opening through the mucous coats of the bladder, and run obliquely between the two coats for a distance of nearly an inch. In this case, as in many cases of loss of entire base of bladder, reported by Emmet, the openings of the ureter were on either side, at the very margins of the fistulous opening. The operation was performed at Morton, Ill., in the presence of Dr. Harris, of that place, and Dr. Mansfield, of Metamora. Dr. Parkes's surmises with reference to the vaginal wall could hardly be correct, because this, together with the anterior wall of the cervix uteri up to the internal os, had sloughed away. His surmise might be correct with reference to certain tissues between the bladder and cervix uteri, which might have retracted and become adherent by inflammation, so as actually to form a portion of the bladder wall. Moreover, there is always a very decided difference in color and appearance between vaginal and bladder tissue, and the tissue in this case was to all appearance like

the tissue of the rest of the bladder, and to the touch gave the sensation of a thin wall. Dr. Baker, of Boston, reports a case similar to this, in that he introduced sutures into the bladder tissue, but so close to the cervix uteri as not to draw down any portion of the interior of the bladder, to be used as material in place of the lost vaginal wall.

DR. W. L. AXFORD reported

A CASE OF REMOVAL OF THE ENTIRE LOWER JAW THROUGH THE MOUTH.

Harry T., aged five. Admitted to St. Joseph's Orphan Asylum in November, 1885. It was noticed that his mouth was frequently swollen and sore. Child very much emaciated. In January, 1886, he had measles. Tedious convalescence followed. Came under observation about February 1. Weak and thin. Lower part of face very much swollen. Breath offensive. Symphysis of jaw bare. Could not examine further at this time. Pulse 120 to 130. Put the child on supporting treatment, hoping to get him in condition for an operation. No improvement at the end of two weeks. February 16 the patient was anæsthetized and the mouth explored. Found the jaw on either side stripped of its periosteum back to the masseters. Determined to attempt removal through the mouth, as any culling operation involving the loss of much blood would have been fatal at once. Divided the jaw on either side of the symphysis with bone pliers and thus removed a large portion of the body. Seizing the remaining pieces with sequestrum forceps and making moderate traction, they were easily enucleated by the index finger of the left hand. Not more than a tablespoonful of blood was lost. Patient rallied well. Some reaction on second day. On third day the pulse had

dropped to 116, and with exception of a swollen parotid on the left side, the child was in better condition than before the operation; so much so that a recovery was confidently predicted. A severe attack of diarrhœa occurring on the morning of the fourth day was followed by death in thirty-six hours.

DR. ARNOLD P. GILMORE exhibited a patient on whom he had performed an operation for

SYMBLEPHARON OF THE LOWER LID,

due to a burn by molten iron, and in which three plastic operations had been unsuccessfully performed. Nine months previously the entire lower lid, from external to internal canthus, was adherent to the eyeball, covering almost the entire cornea. This triangular-shaped tissue was covered by a pale membrane of cicatricial tissue. The operator first detached the lower lid and transplanted the conjunctiva of a rabbit. For six weeks the operation was apparently successful, but after an absence of two months from the city he found the lid was again becoming adherent. Six weeks previously Dr. Gilmore made a thorough dissection, freeing the lid and making a deep cul-de-sac, leaving the upper half of the eyeball covered by mucous membrane and the lower half bare. A semi-circular band of conjunctiva, one-third inch wide, was dissected close to the cornea above, leaving a bridge of tissue at each end. This band was dropped into the cul-de-sac below and carefully stitched to the ball. A semi-circular plate of silver, long enough to fill the space between the external and internal canthi, with two holes at the circumference, one-half inch apart, threaded with silver wire, was dropped into the cul-de-sac to prevent adhesions, and

fastened by bringing the wires through upon the face and fastening them by small lead plates and perforated shot. For this operation Dr. Gilmore claimed priority. The object of the operation was neither to improve the appearance of the eye nor to restore vision, but to relieve the irritation of the other eye, by allowing coördinate movements of the two eyes. There was enough clear cornea left to make an artificial pupil in case the patient ever lost his well eye. There was little reaction, and at no time much pus, while the well eye has grown stronger in spite of the presence of the plate.

DR. TILLEY thanked Dr. Gilmore for showing this case, but thought that if the Doctor were to go out of town again for two months, as in the first instance, he would find at the expiration of that time the conditions relatively very much the same as on his return after the first operation. He thought there was little fundamental advantage likely to be associated with the operation, as he thought that in a short time the wire and plate would cause a certain amount of atrophy of the intervening tissue and the plate be forced up out of position, making the operation of no avail. If he was so unfortunate personally as to be placed in a similar position, he would have his eye enucleated.

PROFESSOR E. L. HOLMES thought it unwise to say that a certain thing could not possibly be accomplished, but he had been through the experience of putting in plates, and seeing it done, and never saw one permanently successful. It is different with a very narrow symblepharon in which the globe and eyelid are grown together, where by dissection and transplanting the mucous membrane excellent results may be attained. He thought the plate would irri-

tate the cicatricial tissue and cause it to be very much thickened, and after a few months, or weeks even, when everything is removed, there will be the same tendency to creep over the cornea and make adhesions with a broad union. He thought it absolutely impossible to get an artificial eye to fit. A very small eye might be used and temporarily make it appear that the patient was better off, but that small eye will often irritate and cause the cicatrix to increase.

THE PRESIDENT thought this case one of the same category that is so troublesome to the general surgeon, the improvement of deformities from cicatrices of all kinds, in which relief comes only in the way that Dr. Dudley has applied in gynæcology, after the divided cicatrix has been separated as widely as possible, by drawing together the healthy skin or tissue between the two ends of the divided cicatrix. This method has long been in use in general surgery. So far as his experience went, the application of any foreign body between these divided surfaces has never been followed by success, so far as prevention of contraction goes.

THE PRESIDENT presented an

ENCAPSULATED SARCOMA OF THE THIGH.

It had been in alcohol for some time, and was reduced about one-third in size. It had grown the full extent shown in three months, and was removed from an old lady aged sixty-nine. It was found growing upon the posterior part of the upper portion of the thigh; was a firm, smooth tumor to the touch, and as far as external manipulations determined could not be distinguished positively from other parts of the surrounding tissues. He could not determine whether it was or not attached

to the bone, but from external appearances it was diagnosticated to be of a malignant type. The external surface was crossed by a large number of varicose veins. After removal it was shown to be a sarcoma. The interesting point was the rapidity of its growth. He thought it a singular coincidence that about a year previous he had removed a similar tumor from the upper portion of the left arm of an old man of seventy-two years, which had also grown to the full size in three months. Upon exposing the tumor a perfect capsule was reached, and it was easily enucleated from its bed.

Book Reviews.

The Management of Labour and of the Lying-In Period. A Guide for the Young Practitioner. *By* Henry G. Landis, A. M., M. D., *Professor of Obstetrics and Diseases of Women in Starling Medical College, etc. 12 mo., pp. viii., 334. Philadelphia:* Lea Brothers & Co., 1885. *Chicago:* Jansen, McClurg & Co.

The aim of this little volume is to serve as a guide to practice, divested of all superfluous or irrelevant details. The author desires "modestly to say to the physician":

"Let this not lie unread upon the shelf, unless you know some better way yourself." The design of the book is certainly good. But the American press is prolific of such

books,—some of them very excellent treatises. The practitioner justly demands of the author by what authority he doeth these things. Unless the author can meet this challenge, he is presumptuous to offer a new book to the profession. Let us accordingly inquire as to the "manner, skill, and ability with which the design has been carried out."

In the chapter on "The Normal Standard," the writer asserts that in ideally normal labour there is no pain, or but little, and that six hours represent the maximum limit of normal parturition. In the discussion of the diagnosis of presentation no allusion is made to abdominal palpation. Dr. Landis says the great objection to frequent vaginal examinations is that the finger is apt to withdraw each time some of the lubricating mucus from the vagina. The freedom with which the author advises digital dilatation of the *cervix uteri*, and his suggestions with reference to the care of the perineum, evinces an utter disregard of principles of treatment definitely established early in this century. The cord must be tied as soon as the child cries! The author usually "Credé's the placenta!" "There is no reason why we should not use the verb *to Credé* as simpler than the periphrasis 'to use the method of Credé.'" It is recommended that within a few hours after the termination of labour, the woman "sit upon a chamber placed in the bed and try to urinate." "In puerperal eclampsia," says Dr. Landis, "the temperature increases with each convulsion, and in fatal cases may reach 100° F. or 109° F. In uræmia the temperature falls and may be subnormal."

In the chapter on pelvimetry, we are informed that "external pelvimetry is of no use in an individual case." It is needless to multiply examples of grave errors both as to fact and opinion. There is scarcely a single page which does not abso-

lutely condemn the treatise. The mode in which the design of the work has been carried out is hopelessly bad.

An eminent obstetrician recently said to an acquaintance, "The practice of midwifery in the United States is rapidly becoming one of the lost arts." If the little volume before us be regarded as a fair exponent of the practice of obstetrics in the United States, we would be compelled to adopt the opinion of our pessimistic friend. We are under the impression, however, that the author's views and methods of practice are peculiarly his own.

THEORY AND PRACTICE OF OBSTETRICS. *By* P. CAREOUX *and* S. TARNIER. *Edited and revised by* ROBERT J. HESS, M. D., *Philadelphia. Octavo, pp. xxxii., 1081. Philadelphia:* P. BLAKISTON SON & CO. 1885. *Chicago:* W. T. KEENER.

Cazeaux's "Obstetrics"—a justly popular text-book in the United States some years ago—possesses now the historical interest to which as a classical work it is entitled. The additions and revisions of Professor Tarnier fail to bring the book up to the standard established by recent publications on the same subject in the English, German and French languages.

A similar remark is applicable to the editorial labors of Dr. Hess, although the value of the work is enhanced by his very readable chapter on puerperal insanity. The chapter on laceration of the perineum is entirely superfluous.

Due credit is nowhere given to Schroeder, Braune, Bandl and others for the free use of their plates and figures.

The book is essentially an old one. The recent anatomical investigations of the *cervix uteri*, during pregnancy and labour,

Professor Lahs' theory of labour, the results of late researches into the nature of eclampsia and puerperal fever, and the like, are conspicuous by their absence.

THE ESSENTIALS OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL, FOR THE USE OF STUDENTS. *By* E. A. SCHAFER, F. R. S. *Jodrell Professor of Physiology in University College, London; Editor of the Histological Portion of Quain's Anatomy. Philadelphia:* LEA BROTHERS & CO. *1885. Chicago:* W. T. KEENER.

This book is intended as a working manual for the laboratory as well as a text-book on histology.

The methods of the study of the tissues, though not in every case the best possible, are all good, and above all practical in laboratory teaching.

The histology is founded upon the second volume of Quain's anatomy, written by the same author. Those who are acquainted with Quain will expect a high grade of performance here, nor will such expectation be disappointed. The author seems to have recognized the fact that in a work of this kind it is his duty to give the state of the science as it is received by the best authorities, and not to air his own notions. This aim he has adhered to, admirably. A significant difference between the descriptions of the white blood-corpuscles in this volume and that in Quain, will illustrate. In Quain, Klein's figure of the network in the white corpuscles is reproduced and endorsed. In the present volume the

figure is absent, and all he says is that "articular structure is described by some histologists." He seems doubtful of the facts. This conservatism as to theories does not prevent his accepting new facts promptly, as may be seen in his description of a villus.

But no human work is perfect. He has not seen the eminence in the centre of the red blood-corpuscles, called by some a nucleus, though he mentions it, probably because he will not use the proper illuminating apparatus, very likely regarding all such things, in common with so many other histologists, as playthings.

He gives the number of the red corpuscles in a cubic millimeter of blood as from four to five millions, although the best authorities say the number is at least a million more.

Perhaps the most careless part of the book is on the kidney. In a table of the course and position of the tubules with the character of their epithelium he says the "epithelium of the convoluted tubule is cubical, fibrillated, ciliated," etc. In the text he says that "in many animals" these cells "have been shown to be ciliated." He does not state, however, that the cilia have been found in the *neck of the tube only*, where it passes out from the malpighian capsule and that it may be the remains of a fœtal structure, and is not always present in these animals. The cilia are found in the tubes in the lowest animals only, such as birds and reptiles that have solid or viscid urine. They have never been demonstrated in any part of the kidney in man and most of the higher mammals. It would seem to be a matter of no such extraordinary difficulty to find them with the modern methods, if they really are present, when they can be shown

in the central canal of the spinal cord with such comparative ease.

One who was critical might find other places not faultless, but occasions for censure are rare. On the whole, the book is excellent, and supplies a want, there being no histology in the market adapted to the wants of the student except, perhaps, Quain; but for most students Quain is out of reach. L. C.

...TH BY THE AUTHOR.

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ORIGINAL COMMUNICATIONS.

IV.

THE ORIGIN, DEVELOPMENT, DEGENERATION AND DEATH OF THE TUBERCLE OF TUBERCULOSIS.

By H. D. SCHMIDT, M.D., *Pathologist to the Charity Hospital, New Orleans.*

Although I do not intend to enlarge in this paper upon the pathological anatomy of those organs which, in the human organism, are mostly found to be affected by tuberculosis, some general remarks on this subject are nevertheless demanded, in order to serve as a basis for a thorough discussion on the relationship existing between the bacterium tuberculosis and the particular neoplasm which, in the form of small tubercles, characterize the disease.

The discovery of Villemin of tubercles artificially produced in various organs of certain animals by the inoculation of tuberculous matter, in 1866, and more particularly that of the bacillus tuberculosis by Koch, in 1882, could not but increase the interest which the medical profession has always evinced on the subject of tuberculosis, whilst it gave rise to new, and, perhaps, more thorough investigations into the

pathology of this fatal disease, than had been made before. These more recent investigations, including the labors of Villemin and Koch, into the nature and cause of tuberculosis called forth very numerous verbal and written discussions, in which the subject was thoroughly reviewed in all its aspects; so that, at the present time, almost every physician may be familiar with the history of this disease, as well as with the different theories, to which, in the course of time, it had given rise. For this reason I shall forbear making any special remark on this subject, but confine myself to only recalling to the mind of the reader that tuberculosis was formally regarded by many physicians, and still is by some, as a disease distinct from that generally known as pulmonary phthisis, catarrhal or cheesy pneumonia, etc. But although some differences may exist in the course and the accompanying clinical symptoms of these two affections of the lungs, it appears that at the present time they are by the great majority of physicians regarded as identical in their nature. My own investigations into the pathological anatomy of tuberculosis corroborate the correctness of this view, for both affections are from their beginning undoubtedly characterized by the formation of small tubercles identical in origin and structure, though in the one affection these tubercles remain confined to the lungs, whilst in the other they are also met with in other organs. Before continuing, however, our remarks on the identity of cheesy pneumonia and miliary tuberculosis, it appears to me proper to first consider the origin, development, and structure of the so-called miliary tubercle itself, as well as the different changes which it is observed to undergo during the course of the disease in question.

In order to obtain a correct idea of the particular structure

and nature of any pathological formation, it is essential that we should have some knowledge of the mode of its origin and development. Such a knowledge is particularly required in the investigation of the miliary tubercle, where the object in view is not limited to its structure and mode of origin, but, moreover, extends to the inquiring into the particular cause by which this neoplasm is called into existence. Accordingly, in commencing these investigations we must direct our attention not only to the smallest, or most recently formed tubercles, but, moreover, to every pathological change, that might be observed to have occurred in the surrounding, apparently healthy, parenchyma. Although the mode of formation of the tubercles is the same in the so-called cheesy pneumonia as in the more typical pulmonary miliary tuberculosis, the most suitable material for the microscopical study of the origin of the tubercles, will nevertheless be found in the lungs, or even other organs, of those cases affected by the last mentioned form of tuberculosis, as here, not unfrequently, portions of the respective organ are met with, in which the disease has not yet passed beyond its incipient stage. Before, however, considering the probable origin and development of the miliary tubercle, let us take a glance at the structural character which it presents when fully developed. The most suitable material for this purpose will be found in the sections, taken from lungs solely affected by miliary tuberculosis, and containing tubercles differing in size, and representing different stages of their growth.

In examining such sections under the microscope it will be seen that the miliary tubercle in the beginning of its formation appears to be limited to one alveolus, whence, however, it soon extends its growth to the adjacent alveoli

of the same terminal lobule. It is thus that most of the tubercles, met with in miliary tuberculosis, even the smallest that can be seen by the naked eye, are found to comprise a smaller or larger number of alveoli. In the formation of the larger tubercles, met with in the lungs of cases of cheesy pneumonia, the tubercular growth extends through the interstitial connective tissue to the alveoli of the neighboring terminal lobules. In this manner one of the larger lobules of the lungs, formed by a number of terminal lobules, may eventually be rendered tuberculous. The tubercular growth, however, may even extend beyond this limit and not be arrested until it has invaded a smaller or larger number of the larger lobules, giving rise to one of those tuberculous masses, or nodules, above mentioned. The formation of the larger tubercles or tubercular nodules or masses may here and there be owing to the growth and fusion of adjacent smaller ones, though my own observations have taught me that generally the tubercle of tuberculosis, whether small or large, grows from one centre in a centrifugal direction.

In examining one of the medium-sized or even larger miliary tubercles, contained in a thin section of tuberculous lung, it will be found to be composed of different kinds of cells and other anatomical elements. Whilst its main bulk, including the centre, consists of the regular tubercle cells, averaging in diameter about 1-75 mm., and of an irregular, though epithelioid form, probably produced by their mutual pressure, the cells, observed at its periphery, are smaller in size, resembling rather in form and character the so-called lymphoid or exudation cells. In many tubercles, and imbedded between the regular tubercle-cells, a limited number of cells are met with, distinguished by their unusually large size. These are the so

called giant-cells of the tubercle, *apparently* consisting of large masses of protoplasm containing numerous nuclei.

In addition to the cells thus described, however, there is another kind met with, especially in the larger and older tubercles, to which I have already referred in the beginning of this paper. They are best made visible by treating a thin section of tuberculous tissue with a solution of caustic potassa of a strength from 10 to 30 per cent., by the reaction of which all the anatomical elements contained in the section are rendered clear, and eventually destroyed, with the exception of the elastic tissue fibres and these peculiar cells. The latter then appear round or oval in form, mostly larger than the regular epithelioid tubercle cells, and always filled with larger and smaller fat globules. In many tubercles, however, these cells present a dirty brownish or blackish appearance, produced by a smaller or larger number of black pigment granules and minute fat crystals which they contain in addition to the fat globules.

Besides the above-mentioned cellular elements, many of the larger miliary tubercles contain not only the original elastic tissue fibres of the inter-alveolar septa, but, moreover, a connective tissue network, or reticulum, which is regarded by some authors as the stroma of the tubercular neoplasm.

In order to properly understand the relationship in which these different elements, composing the miliary tubercle, stand to one another, it is essential to ascertain the sources from which they are derived. This, however, is a task more difficult to accomplish than one might at first glance imagine. It is for this reason that, though this subject has been quite extensively investigated, some differences of

opinion concerning the true origin of the tubercle of tuberculosis still exist among pathological anatomists. The best mode of ascertaining the true sources of these elements consists, of course, as I have already pointed out above, in closely studying the first pathological changes taking place in the intertubercular parenchyma of the lungs, which generally manifest themselves in a multiplication of the cells of one or the other anatomical element. From these primarily formed cells, then, the further development of the tubercle may be pursued and studied in specimens exhibiting the different stages of its growth.

In examining a thin section of miliary tuberculous lung the first signs of the formation of a tubercle may be recognized in a protuberance arising from the wall of one or the other alveolus. From this protuberance the young tubercle is observed to bud, in the form of a little round or conical tumor, into the cavity of the respective alveolus. Generally, the base from which the little tumor arises, exceeds in dimension the tumor itself, but not unfrequently the latter may also be observed to be attached to the wall of the alveolus by a contracted part, or so-called neck. By a continued growth the neoplasm eventually fills up the whole cavity of the alveolus. In most instances, the growth of the base of the tubercle extending over the wall of the alveolus exceeds in activity that of its summit, in consequence of which the tubercle becomes eventually attached to the whole wall of the alveolus, thus completely filling its cavity Not unfrequently, however, though filling up the cavity of the alveolus, it is observed to arise from a smaller base, and with a part of its body detached from the rest of the alveolar wall. In the examination of thin sections of

tuberculous lung, not only tubercles partially detached from the wall of the alveolus, but also others, having apparently no connection at all with the latter, are frequently observed. In the latter cases, this entire want of connection between the tubercle and its alveolar wall is easily explained by presuming that during the making of the section the knife passed through the detached portion of the body of the tubercle. As the miliary tubercle grows in a centrifugal direction the particular mode of its origin with the different stages of its development or growth are, of course, best exhibited at the periphery of the tubercle.

But not only in sections taken from lungs of cases of miliary tuberculosis, the particular mode and origin of development of the tubercle is observed to take place in the manner I have described above, for the same is also observed in the growth of those tubercular nodules or masses met with in the lungs of cases of chronic tuberculosis or so-called cheesy pneumonia. In sections taken from such lungs, the young tubercles are likewise seen to arise from the walls of the alveoli, bordering the nodule or tubercular mass, or from those bordering the smaller or even larger bronchioles, where they arise in the form of nipple-shaped buds. In examining attentively the borders of these tubercular masses, some inter-alveolar septa are almost always met with that are distinguished by spindle-shaped enlargements, projecting into their respective adjacent alveolar cavities, and resembling the minute miliary tubercles surrounding the small arteries, or arterioles of the pia mater in tuberculosis of this membrane. In some instances, a tubercular bud is already seen to arise from one side of the enlargement, and to project into its alveolar cavity; in others again,

a tubercle is seen to arise upon a moderately extended base from the walls of one or the other alveolus, and to extend into the infundibular cavity which is the more or less filled up by the neoplastic growth. Sometimes, even, I have observed the tubercle to extend through the infundibulum into an adjacent alveolus. When during the cutting of the section of such a tuberculous lung, the knife passes in a transverse, or even slightly oblique direction, through one of these tuberculous polypi, the section of the latter will, of course, be found to lie free in the cavity of its respective alveolus. Thus it happens that in the immediate neighborhood of these tubercular masses sections of small tubercles, distinctly composed of epithelioid cells, and in no way attached to the walls of their alveoli, are not unfrequently met with. As the diameter of these sections of minute tubercles hardly ever reaches that of the alveoli in which they lie, but on the contrary is mostly considerably smaller than the latter—in some instances not more than one-third—there will be always left a smaller or larger empty space between their borders and the alveolar walls. This circumstance, together with their being composed of distinct epithelioid cells, make them resemble minute masses of desquamated epithelium, such as are asserted by some authors to be present in the alveoli of the lungs in cases of the so-called catarrhal pneumonia, the supposed forerunner of pulmonary phthisis. I hesitate not to confess that when I first beheld these bodies I was, myself, inclined to regard them as accumulations of such desquamated epithelial cells, until closer investigation showed me their tubercular origin. In other instances, however, similar minute aggregations of these epithelioid cells may be observed to be attached to the alveo-

lar wall by short and quite narrow pedicles, resembling minute tubercles arising from the epithelium of the alveolus. To these I shall refer again hereafter.

In the foregoing paper I have described the forms in which the miliary tubercles are first seen to arise from the internal surfaces of the walls of the alveoli, but omitted to mention the particular anatomical element directly concerned in their production; in other words, whether they owe their origin to the connective tissue cells of the vessels ramifying between or in the alveolar walls, or may be regarded as a proliferation of the epithelial cells lining the alveoli. As regards this subject, some difference of opinion appears still to exist among pathological anatomists, for while some of them regard the tubercle as a product of inflammation, that is, arising from the cells of some connective tissue, or even from cells migrated from the blood or lymph into the walls of the alveoli, others regard them as a product of the epithelium lining the pulmonary air vesicles. In considering the epithelioid form of these cells, composing the greater part of the miliary tubercle, it appears at first sight difficult to ascertain the true histological origin of the latter. The difficulties met with in the investigation of this subject, however, will be found to diminish and to finally disappear, if our microscopical examinations are sufficiently thorough, and made on a great number of preparations, in order to serve as a reliable basis for sound inductive reasoning. The best way of forming a correct idea of the relationship existing between the different tubercle cells, that is, between those derived from the connective tissue-cells of the vessels, and the others derived from the epithelium of the alveoli, certainly consists in taking into proper consideration their

origin in those primary cellular layers of the germ, or blastodermic vesicle, from which the different tissues of the embryo take their start. Let us pursue, therefore, this course, and briefly review the development of the human lungs, more especially that of their parenchyma, such as it is observed in the earliest stages of embryonic life.

The *blastoderma*, or blastodermic vesicle, is formed as we know from those cells resulting from the segmentation of the yelk of the egg, which spread themselves in the form of a single layer over the internal surface of the egg-membrane, the *zona pellucida*. At a certain part of this layer, however, an accumulation of these cells in the form of an hour-glass-shaped disk, representing the so-called "*germinal area*" (*area germinativa*), has taken place, in which the embryo originates. The next phenomenon observed in the development of the latter is the separation of the *blastoderma* into two distinct layers, which may be regarded as the first act of differentiation taking place, for the reason that from the outermost of these layers, called the *ectoderma*, all organs performing the functions of animal life will be formed, while the innermost, the *entoderma*, give origin to all organs destined to perform the functions of vegetative life. Besides this difference of function, however, already at this early period of embryonic life, other differences have been observed to exist, not only in the size, form and general appearance of the cells of these blastodermic layers, but, moreover, in some of their physical properties; for while the cells of the *ectoderma* are small, clear and smooth, and absorb but *feebly* coloring matter, such as carmine, those of the *entoderma* are larger and darker, fewer in number, filled with minute granules, and absorbing the carmine quite intensely; besides, they are rendered darker by the reaction to osmic acid than the ectoderm-cells on account of the minute fat-globules which

they contain. This difference of degree in the absorption of coloring matter, or in the reaction to osmic acid is, according to *Haeckel*, already observed in the first pairs of cells, resulting from the cleavage of the ovum.* As soon as the first morphological changes, indicating the formation of the embryo, take place in these germinal layers, another layer appears between them. This is the *mesoderma*, or so-called " motor and germinative " layer, from which all the parts of the body consisting of connective tissue, muscles and nerves, together with the urinary and generative organs are formed. During the primary stage of development of the embryo, however, the *mesoderma*, also, splits up into two subordinate layers, the outermost of which, the *lamina inodermalis* (Haeckel) is destined for the formation of the corium, muscles of the trunk and extremities, and the bones, while the innermost, the *lamina inogastralis* (Haeckel) gives origin to the muscles and fibrous coats of the intestines and their glands, the muscles of the pharynx, æsophagus, stomach and other appendages of the alimentary canals, as well as to the heart and the most important blood vessels. The divisions of the *mesoderma* may be regarded as another act of differentiation concerning the functions of those organs for which its two layers are destined, *i. e.*, the one for organs of animal, the other for organs of vegetative life. Thus the original *blastoderma* now consists of four distinct layers, which, counted from the outside, have been denominated by Haeckel as follows: 1. *Lamina neurodermalis* (*ectoderma*); 2. *Lamina inodermalis*; 3. *Lamina inogastralis* (*mesoderma*); 4. *Lamina mycogastralis* (*entoderma*).

As regards the origin of the *mesoderma*, however, differ-

* H. E. Haeckel.—"*Anthropogenie oder Entwicklungsgeschichte des Menschen.*" 3rd edition, p. 172.

ences of opinion exist among the different investigators of this subject, and the question is, as yet, not decided, whether the middle layer is derived from *ecto-* or *entoderma*, or whether its subordinate layers may not be derived from both, that is, the outermost from the *ectoderma*, and the innermost from the *entoderma*. For certain reasons, I am inclined to give preference to the statements and views of A. Koelliker,* one of the oldest and most reliable investigators, who regards the *mesoderma* as being derived from the *ectoderma* alone.

Having by the above review of the formation of the primary cellular layers of the embryo now obtained a basis upon which to rest our arguments concerning the origin and signification of the different kinds of cells of which the miliary tubercule is composed, we may turn our attention to the origin and development of the lungs, representing those organs in which the tubercle is most frequently met with. In the embryo the lungs are found to originate in the upper part of its primary alimentary canal, called the "foregut," where they first appear in the form of a minute dilatation, which, by gradually lengthening, assumes the form of a tube which, in its turn, gives rise to two similar tubular processes. While the latter represent the primary larger bronchi, the parent tube represents the trachea. From each of these primary bronchi, then, two other subordinate bronchi originate which, again, in their turn, give rise to other subordinate branches, until, by the continued formation of new and smaller ones, the whole bronchial system is eventually developed. The primary alimentary canal, from which the trachea and bronchi take their origin, is composed, as we know, of two blastodermic layers, viz.: the *entoderma*, and the inner division of the *mesoderma*, the

* A. Koelliker.—"*Entwicklungsgeschichte des Menschen und der hoeheren Thiere.*" 2d edition, p. 268.

lamina inogastralis of which the former is represented by the epithelium and the latter by the fibrous envelope of the canal. These same layers, of course, build up the trachea and bronchi. According to Koelliker, however, in the beginning of the development of the bronchial system, the *entoderma* alone takes part in the formation of the bronchial branches, which bud, so to say, into the surrounding cellular mass of the *lamina inogastralis*. This phenomenon seems to indicate that the development of the bronchial system mainly proceeds from the *entoderma*. Soon after, of course, the *lamina inogastralis* also takes part in the process of formation of the bronchial ramifications, so that each new bud, arising from the end of its predecessor, consists already of two membranes; though, even now, the epithelium of the bronchial tubes still takes the lead in the formation of new buds. By the successive formation of new subordinate bronchial tubules the whole bronchial system appears developed at the sixth month. During the development of the latter the newly formed bronchial tubules present at their ends spherical dilatations, designated by Koelliker "*primitive gland-vesicles*," and from which, in turn, the new bronchial buds arise, but which as yet do not represent the pulmonary air vesicles or alveoli of the fully developed lungs. Already in the fourth month, Koelliker found all the bronchial tubules, with the exception of their vesicular terminations, lined by a ciliated epithelium. In the sixth month, finally, the alveoli are formed in the manner that the vesicular buds, arising from the last-formed primitive gland-vesicles do not separate any more from one another during their growth into pedunculated vesicles, but remain connected to one another, opening besides into a common space which represents the so-called "infundibulum." These terminal vesicles are, furthermore, distinguished by a flat pavement-like epithelium.

The above sketch which I have drawn of the development of the lungs in the earlier stages of embryonic life, shows that, while the greater part of these organs, comprising the fibrous and muscular elements of the larger and smaller bronchi, together with the walls of the alveoli, as well as the larger and smaller blood vessels, are derived from the *mesoderma*, which itself is a product of the original "animal layer" of the blastodermic vesicle, the *ectoderma*—the remaining part consisting only of the epithelia of the bronchi and alveoli may be traced back to the "vegetative layer," the *entoderma*. But as the miliary tubercle is found to be built up chiefly by comparatively large cells, epithelioid in form, it would almost appear to be a product of the epithelial cells lining the alveoli. This, however, is not the case, for, though these tubercle cells do, to a certain extent, resemble in form those of an epithelium, they, nevertheless, as we shall see directly, are derived from another source. But even if we should fail to trace them back to another tissue than the alveolar epithelium, we might point to a certain phenomenon, observed in the life history of the miliary tubercle, which clearly shows that this neoplasm can not be the product of an epithelium. I refer to the phenomenon observed in those cases of so-called "fibrous miliary tubercles," in which the tubercle cells become organized into a tissue of a higher grade, into a sort of connective, or so-called "cicatricial tissue." This process of organization, as we know, is never observed to take place in the cells of an epithelium, or in those of a gland, but, on the contrary, always involves the cells of connective tissues, or their descendants. Nor is it limited to cases of fibrous tubercles, for, in those indurated portions of lungs of cases of chronic tuberculosis, also, tubercle cells may be seen to elongate and to be converted into a ort of coarse connective tissue.

The best example, however, for showing that the miliary tubercle is not a product of an epithelium, are those tubercles met with in the peritoneal layers of the mesentery and intestines, but still more those which are formed around the small blood vessels of the pia mater. More than four years ago, I made a number of examinations of the tubercles surrounding the blood vessels of this membrane, and distinctly saw them arise from the connective tissue cells of their adventitia. Some of these vessels were so minute, that, though they were stained with picro-carmine, it was difficult to distinguish them by the unaided eye. Suspecting at first the tubercles to arise from the endothelium of these vessels, I directed my special attention to this layer, the cells of which were easily distinguished in the smaller arterioles, but failed in my expectations, as I found, in every instance examined, the endothelium entirely free from tubercle cells, while in the adventitia they were met with in all stages of development. Arising from the cells of the adventitia of the arterioles, or even from the nuclei of the capillary vessels—which generally are also surrounded by a thin layer of cell protoplasm—the tubercle cells multiply by division, and form tubercles too minute to be seen by the naked eye. Though of a moderate diameter, when first arising from the connective tissue cells of the adventitia, they soon enlarge, until they have attained the diameter of those cells, composing a fully developed tubercle, while by mutual pressure they are rendered polygonal in shape resembling then the cells of an epithelium. It must not be overlooked, however, that there are many tubercle-cells, which present very irregular forms, without resembling in any point a regular epithelial cell. The minute tubercles, when first formed, are observed to rest upon the wall of the vessel in the form of minute irregularly shaped masses, though by

continued growth they finally surround it, and assume that ovoid form characteristic of the tubercles of these vessels. The diameter of these tubercles, when fully grown, are generally proportionate to those of the individual vessels upon which they are found. The miliary tubercles met with in the peritoneal layers of the mesentery must, as there exists no epithelium in their close vicinity, of course, arise from the cells of some connective tissue, or, perhaps, as Rindfleisch states, from the endothelium of the lymphatics, or blood vessels. As regards the tubercles of the small intestines I may state, that I have endeavored to trace the connection of these tubercles by carefully separating under water, and with the aid of a strong loupe, the different layers of the intestines. In a number of instances I found the little tumor arising from the fibrous, and extending through the muscular coat. In others, however, as may also be seen in thin vertical sections of the intestines passing through the tubercle, the latter involved the fibrous layer of the mucous membrane where it may finally by its degeneration give rise to tuberculous ulceration. In examining a small miliary tubercle of the liver, the tubercle cells were also seen to arise from the cells of the minute blood vessels, though I would, for the present, not positively assert, that the hepatic cells take no active part in the formation of the tubercle. The same appears to be the case in the kidneys, though in these organs I have, in some instances, met with glomreruli, the vessels and also the capsules which presented the appearance of having been transformed into a sort of connective tissue.

In studying the mode of the peripheral growth and extension of the tubercles in thin sections of tuberculous lung, it will be observed that it always takes place along the adjacent alveolar septa, which are thickened by the multiplication of

of smaller or larger tubercle cells arising from the connective tissue cells of the adventitia, or, perhaps also, from the cells of the endothelium of the vessels, ramifying in these septa. It is thus that in these sections the outlines of the tubercles, when examined under the microscope, appear but rarely as evenly curved lines, though to the naked eye the little round or oval tumors may present a smooth appearance. In most instances, the borders of the miliary tubercles are irregular, to a certain extent star-shaped, or multipolar, the processes being formed by the adjacent inter-alveolar septa, along which the growth of the tubercle proceeds. This is especially the case in those large tubercles and tuberculous masses, met with in those lungs affected with chronic tuberculosis, in which the mode of extension of the tubercular process may be studied to advantage.

After having in the preceding paragraphs endeavored to show that the tubercle cells are most probably derived from the connective tissue cells of the adventitia of the vessels, ramifying in the inter-alveolar septa of the lungs, I shall now pass over to a brief consideration of the general character and relations of all the cells met with in the anatomical composition of the miliary tubercle. Presuming, then, from what has been said above, that the true tubercle-cells are descendants of connective tissue cells, it still remains for us to determine the origin of the other kinds found in their company. In considering first the origin and signification of those small lymphoid cells, generally met with along the periphery of the tubercle, we may suggest that they represent true exudation cells, or, in other words, colorless blood corpuscles, emigrated from the neighboring congested blood-vessels; or, as they are not met with in the main body of the tubercle, they might also be regarded as young tubercle-cells, derived, like the others, from connective-tissue cells. In most instances, the neighboring

blood-vessels of the miliary tubercles are found congested, and, if this is not the case, it may safely be presumed that they were congested during, and even previous to the formation of the tubercles; for it can hardly be supposed that the tuberculous process would take place and continue without an increased activity of the minute blood-vessels, giving rise to a morbid irritation of the connective tissue cells of their adventitia. The abnormal activity of these vessels, however, would soon be followed by a relaxation of their walls, causing a retardation of the blood-current within them, which would finally lead to a permanent congestion of these vessels. Under these circumstances it is not improbable that a number of colorless blood corpuscles emigrate from the blood-vessels, and in association with the tubercle cells—which at the same time are formed from the irritated and now multiplying connective tissue cells of the adventitia—take their part in the formation of the tubercle. It is thus that these lymphoid cells are always met with at the periphery of the tubercle, or in the alveolar septa.

The next kind of cells to be considered are the so-called "giant cells" which, greatly differing among themselves in their diameter, and individually containing a smaller or larger number of nuclei, are principally met with in the older and larger tubercles. Although surrounded by the general mass of tubercle cells they remain unconnected with the latter. In thin sections of tubercles, they appear finely granular, mostly round or oval, though sometimes irregular in form; they are surrounded by an empty space which separates them from the regular tubercle cells, though, in some instances, they appear connected to the latter by processes arising from their body. Although these giant-cells have frequently been the subject of special study, pathological

anatomists still differ in their views as to the origin, nature and signification of these formations. By some they have been regarded as representing coagula within the bloodvessels, around which the tubercle is developed, their nuclei being partly derived from the colorless blood corpuscles of the coagulum, partly from the endothelial cells of the vessels; or, also, the whole giant cell representing a conglomeration of colorless blood-corpuscles;—while on the other hand they have been looked upon as conglomerations of epithelioid tubercle cells, or of epithelial alveolar cells. Again, according to another view, they are derived from the connective tissue cells, or also, from the endothelial cells of the lymph-spaces. When met with in tubercles of the testicle, liver, kidney, and mammary gland, they have been regarded as derived from the epithelia of the seminiferous tubules, hepatic ducts, uriniferous tubules, and milk ducts. Without enlarging upon the various theories existing on the origin of these giant cells, we may say, that they are generally considered to represent smaller or larger masses of protoplasm, derived either from the growth of one cell, the nucleus of which alone was subjected to the process of multiplication, or from a fusion of the protoplasm of a number of cells with single nuclei. From my own observations it appears to me that perhaps the greatest number of these giant cells are formed from coagula of blood within the blood-vessels. I have been convinced of this by observing, especially in thin sections of fibrous tubercles, a number of these cells or masses of protoplasm still to consist of a mass of brownish polygonal cells, lying loosely in, or even connected by some points of their periphery with the wall of empty spaces, representing most probably the lumina of blood-vessels. The walls of the lat-

ter, though fused with the surrounding tubercle, and, like this, consisting of long, spindle-formed cells, could be still distinguished. Whether the polygonal cells, generally surrounded by a brownish, finely granular, substance, were derived from the colorless blood-corpuscles of the coagula, or from the cells of the endothelia of the vessels, I leave for the present undecided. Generally, there were no colored blood-corpuscles observed in the mass, a circumstance, which is, however, easily explained by assuming that the protoplasm of these corpuscles had been appropriated by the other cells to serve them as nourishment during their growth, while the hæmoglobin of the former was left behind. The degeneration of the protoplasm of the giant cell thus formed, which, of course, eventually takes place, causes the obliteration of the outlines of its component cells, so that the whole formation assumes a finely granular brownish appearance. A number of giant cells presenting this appearance and containing a smaller or greater number of nuclei are, therefore, always met with in the tubercles of the same section of lung. But though, as I have said above, the greater number of giant cells may be formed in the manner just stated, I have good reasons to believe that others represent conglomerations of cells of the alveolar epithelium, which, during the growth of the tubercle, were surrounded by the multiplying cells of the latter. To this view I was chiefly led by meeting in a number of alveoli with certain conglomererations of cells, which, presenting the average size of a giant cell, resembled those cells lining the wall of the alveolus, to which they appeared to be attached. These giant cells do not present a brownish appearance, but absorb coloring matter more intensely than the surrounding tubercle cells. I have

never observed giant cells converted, like the true tubercle cells, into any form of connective tissue.

Besides the giant cells there is another kind of cells met with in the miliary tubercle, the origin of which we shall now consider. I refer to those peculiar cells, which are characterized by their brownish or blackish appearance, and by the fat globules and fat crystals they contain; they are, as before mentioned, met with in sections of older tubercles, especially when treated with a solution of caustic potassa. These cells are generally single, and mostly met with along the periphery of the tubercle. They always contain a considerable number of smaller and larger fat globules, and many of them fat crystals, and black pigment granules besides; the latter, in fact, causes their brownish or blackish appearance. By these characters they are easily distinguished from true tubercle cells; for, though many of the latter also undergo fatty degeneration, they do not contain so great a number of large fat globules as the former, nor do they contain fat crystals, or pigment granules. I doubt not but that these cells are identical with the epithelial cells lining the alveolar cavities which, during the growth of the tubercle, are surrounded by, and inclosed in the mass of growing tubercle cells, to finally undergo the fatty metamorphosis, whilst in the older tubercles the fat globules will be converted into fat crystals, or, even, into black pigment. Not unfrequently these cells are also met with in the expectoration of chronic cases of tuberculosis.

There is another anatomical element met with in many, though not in all tubercles, which like the giant-cells has frequently been a subject of discussion, or even of controversy, among different investigators. This is the so-called "reticu-

lum.[5] As far as my own observations extend, I may state that such a reticulum, which by some authors has been compared to the stroma of some pathological tumors, appears to exist in many miliary tubercles, especially in the older ones, whilst in others it is certainly absent. For the reason, however, that I entertain some special views on the origin of this reticulum, which to explain would consume too much space in this treatise, I must for the present forbear to enlarge upon this subject and postpone its discussion to some other occasion.

In the great majority of cases of tuberculosis, the miliary tubercles or tuberculous masses undergo a certain kind of degeneration, known as "coagulation necrosis" which lead to their final destruction. Not unfrequently, however, the cells of the miliary tubercle, instead of undergoing this retrograde metamorphosis, show an inclination to become organized into a higher grade of tissue, by gradually assuming a more and more elongated form, in order to be finally converted into a sort of connective, or so-called "cicatricial tissue." This process may be observed in all its various stages in those indurated portions of lung met with in cases of chronic tuberculosis, where it involves not only the tubercle cells, but also those of the interstitial connective tissue of the organ as well as of the blood-vessels, etc. The tendency of the tubercle-cells toward organization is, moreover, and perhaps more distinctly, displayed in those cases of so-called "fibrous tubercle," the lungs of five of which I have microscopically investigated Here, the tubercles, though miliary in character and mostly small in size, are frequently found lying very near to one another, forming smaller and larger groups or masses. Sometimes even, they fuse with another, though it can always be seen that each tubercle had developed from its own individual center. These tubercular groups, or masses, I mostly found

in the apices of the lungs; only in some instances I observed them, as also single fibrous tubercles, in the other lobes of these organs. In all cases of fibrous miliary tuberculosis that came under my notice, the tubercles were not what might be called "numerous" as we often observe in acute miliary tuberculosis, but they were almost always associated with a greater or less peri-bronchitis fibrosa, or with interstitial pneumonia (cirrhosis of the lungs), and generally characterized by an abundant formation of black pigment.

It is not often, however, that the tubercular process in the lungs is arrested by a fibrous metamorposis of the tubercle cells; on the contrary, in the great majority of cases of tuberculosis, so already mentioned, the disease is carried to a fatal issue by a retrograde metamorphosis, the so-called "cheesy degeneration," or "coagulation necrosis," which the elements of the tubercular growth gradually undergo. By this process, which always commences in the center of the tubercle, and progresses toward its periphery, the protoplasm of the tubercle-cells appears to coagulate and to be converted into a cheesy substance, by the final disintegration and liquefaction of which a cavity is formed in the center of the tubercle. In the course of the degenerative process the outlines of these cells become obliterated, and their protoplasm is gradually converted into a cheesy granular mass, containing minute shapeless bodies or particles. These bodies, I suppose, represent to a certain extent the remains of the nuclei of the tubercle cells, which appear to possess a greater power of resistance to the pathological cause of the process than the protoplasm of the cells. The direct cause of the coagulation-necrosis of the miliary tubercle has, as yet, not been positively determined, though the degeneration is commonly ascribed to a want of nutrition due to the absence of blood-vessels in the tubercle. In exam-

ining thin sections of tuberculous tissues we already observe traces of the degenerative process in almost all tubercles; it is only the smaller ones, or those most recently formed, that are still free from degeneration. In the older and larger tubercles, small cavities, formed by the final disintegration of the cheesy mass, are observed in their center, whilst at the periphery the tubercular growth is still going on. In those large tubercles, formed by the meeting and fusion of a number of smaller ones, several centers of degeneration and disintegration may exist at the same time. By the breaking down of these tubercles a number of small cavities are formed throughout the tuberculous portion of the lung, which, in the course of the disease, may enlarge by the ulceration and final destruction of the intervening non-tuberculous parenchyma. Such a condition is mostly observed in miliary tuberculosis. In some cases of chronic tuberculosis, however, smaller or larger circumscribed cheesy masses, surrounded by healthy parenchyma, are frequently met with, in which only one cavity, produced by the breaking down of their substance is found to exist. From this circumstance it appears that in these masses, some of which are more or less spherical in form, the tubercular process started from only one center, and after having proceeded in a radiating direction to a certain extent, was by one or the other cause arrested. These formations represent, in truth, miliary tubercles on a large scale. They are, generally, partially detached, partially still connected with the surrounding healthy parenchyma. Several years ago, I have hardened quite a number of these circumscribed cheesy masses, or nodules, some of which as large as a walnut (about one and a quarter inch in diameter), in Mueller's fluid, followed by alcohol, with the view of investigating their exact nature in thin sections. The microscopical examination of these sections showed me

that, while at the borders of the cavities the substance of these giant tubercles was, as in the ordinary miliary tubercles, completely degenerated and disintegrating, their former structure could be still distinguished throughout the greater part of the section. Not only the outlines of the numerous alveoli, bronchioles, interstitial connective tissue, etc., which had been involved by the growth, but also, toward the periphery of the latter, those of the tubercle cells could still be recognized. The borders of these circumscribed masses were formed by long structureless bands, concentrically arranged around their periphery and connected with the surrounding non-tuberculous parenchyma. No traces of the outlines of elongated cells, indicating their formation from tubercle-cells, could be discovered in these bands; but though of a smooth homogeneous aspect, they rather appeared to have at one time represented bundles of neoplastic connective tissue, the product of some inflammatory process. A closer study of the subject subsequently showed me that they represented the former walls of the adjacent alveoli of the surrounding non-tuberculous parenchyma, which, being put on the stretch by the increasing dimensions of the tuberculous growth, had adapted themselves to the peripheral form of the latter, and, through the inflammatory irritation extending from the neighboring tuberculous mass to their blood-vessels, were eventually converted into bundles of a coarse neoplastic connective tissue. That this was the true explanation of the phenomenon observed, was proved by the surrounding alveolar walls of the healthy parenchyma, which, still connected to these fibrous bands, presented in the section the form of more or less elongated meshes, produced by the stretching of the lung parenchyma.

The conversion of the alveolar walls into neoplastic connective tissue, however, is not only observed around the periphery of the

above described tuberculous masses, but takes place also in other localities of tuberculous lungs, for instance, along the borders of those portions of indurated lung, met with in chronic tuberculosis. Even, along the periphery of miliary tubercles, sections of the alveolar walls of the surrounding parenchyma are frequently observed to present the form of elongated meshes. A similar aspect is presented to the eye of the observer in the microscopical examination of sections made from lungs affected with peribronchitis fibrosa. Here sections of obstructed bronchial tubes will be met with in which the original structure of their walls is entirely obliterated, and the whole tubule appears to be converted into connective tissue; the cavity seen in the center of the tubule represents the disintegrating fibrinous thrombus. The sections of such bronchioles somewhat resemble those of miliary tubercles, though a closer examination will show no trace of a tubercle cell, but rather that they consist of concentrically arranged homogeneous looking bands, some of which are still connected with the elongated alveolar walls of the neighboring parenchyma of the lungs.

Although the formation of these fibrous bands along the borders of tubercles, otherwise tuberculous portions of lungs, might be regarded as a means of nature to arrest the morbid process of tuberculosis, this is rarely the case. On the contrary, the homogenous structureless appearance of this neoplastic connective tissue already shows that it will be, like the tuberculous portions of lung which it borders, finally subjected to the coagulation necrosis. The elongated spindle shaped tubercle-cells, playing a prominent part in the process of induration of certain portions of tuberculous lung, either such as they are, or transformed into a coarse connective tissue, are in most instances likewise doomed to undergo the same destructive process. It is this that in cases of chronic tuberculosis

very considerable portions of lung are frequently destroyed and large cavities formed. The only organs, capable of resisting this general destruction, are the larger blood vessels and bronchial tubes, which are frequently met with stretched across these cavities in the form of single cords. Like the ordinary miliary tubercle, the fibrous tubercle, also, is subject to undergo, at least in its center, the coagulation necrosis.

From the above sketch of the origin, development, retrogression and death of the miliary tubercle in its various forms, it will be seen that the tubercular process is very complicated, and that it closely resembles in its products and their metamorphoses the process of chronic inflammation. To convince ourselves of the truth of this assertion we have but to examine and study the condition of the lungs of a case of chronic tuberculosis. In such lungs all the various stages of the inflammatory process will be found represented in different localities of these organs. Thus we may find the superior lobe hollowed by smaller or larger cavities, which, frequently communicating with one another, are like a chronic abscess lined by a so-called pyo-genetic membrane, and contain a greater or lesser quantity of purulent matter. The remaining parenchyma of the lung between these cavities is generally found indurated, and, when miscroscopically examined, presents to the eye of the observer a most variegated picture of its anatomical elements passing through the various stages of the inflammatory process. Approaching in our examination the base of one or the other lung we may find, according to the prevailing circumstances of the case, a decrease of the inflammatory destruction in the absence of the cavities, whilst the parenchyma, though still congested and containing large tubercles or tubercular masses, appears more soft and spongy than in the upper portion of the lung; or, at the very base of

the organ, the parenchyma may even present the appearance of a typical miliary tuberculosis. In accordance with the special conditions of the different parts of such a lung; its surface also presents a variety of colors and their shades, for, whilst one portion of it may appear more or less gray by the induration of its parenchyma or the thickening of the pleura, another portion may by the congestion of its vessels present a red or blue appearance, while a third will exhibit all the macroscopical characters of emphysema. Thus it happens that, in severe cases of chronic tuberculosis, a combination of otherwise individual inflammatory diseases of these organs, such as bronchitis, peribronchitis, bronchiectasis, interstitial pneumonia, etc., may be found to exist at one and the same time.

With the foregoing paragraph I close the general remarks on the pathological anatomy of tuberculosis, to which I referred in the beginning of this division of the present treatise. The sketch which I have drawn of the origin, development and death of the tubercle of tuberculosis is, though it may serve my present purpose, far from being complete. But as the reader may infer, from what I have already said above, the subject of tuberculosis is too complicated and extensive for a thorough discussion in all its details in the limited space of my present treatise, requiring rather the numerous pages of a whole volume. Whatever, therefore remains to be said on the pathology of tuberculosis I will have to postpone to a more convenient occasion.

PARALYSIS AGITANS. *By* EDWARD C. MANN, M.D., *Superintendent Sunnyside Home for Nervous Invalids.*

Paralysis agitans is a disease characterized by involuntary tremors or shaking movements of the limbs, head or trunk of the body, of a spasmodic nature, by diminished muscular power or paresis, and in an advanced stage of the disease by a disturbance of equilibrium, shown by a tendency to stoop forward, and an accelerated walk. The tremors constitute the most distinctive features of the disease. In the first stage of the disease the tremors and paresis affect either the arm and hand or perhaps the leg or the head. Secondarily, the tremors become generalized and finally affect the whole body. The disease is very insidious and progressive and the tremors tend, as the disease advances, toward convulsive activity. Sleep relieves the patient, as then there is a cessation of the convulsive tremors. The forward stoop is caused by paresis of the extensor muscles of the back and the muscles become rigid and contracted as do also the muscles of the extremities. There is a verbal paralysis to some extent. If the disease progresses to a fatal termination the patient wakes up greatly frightened in the night by the convulsive agitation appearing even then, and the poor sufferer is finally completely exhausted. The cutaneous sensibility is not affected in paralysis agitans, neither as a rule are the special senses, nor the integrity of the intellect. The disease comes on in advanced life generally. All writers upon diseases of the nervous system concur in the statement that, with a few rare exceptions, it is incurable.

Dr. J. Russell Reynolds, of England, has reported one

very interesting case of cure by the continuous or galvanic current, and Remak has also reported one. The diagnosis is easy, as in other tremors the trembling does not occur when the parts are not in use and are supported. The non-senile form may occur in early life, but there is no fatal tendency and the tremors disappear, except when voluntary movements are attempted, and there is no disturbed equilibrium or forward stoop. Hysterical paralysis agitans is accompanied by other hysterical symptoms. Intermittent paralysis agitaus in the young is removed by anthelmintics, as it generally depends on intestinal worms. Chorea is a widely different disease, and is not liable to be confounded with paralysis agitans. The lesion in the fatal cases would seem to consist progressively of irritation, congestion and, finally, sclerosis and atrophy of the motor nerve centers, while in the cases on record that have recovered the trouble was probably functional, and had not progressed beyond the stage of impaired nutrition, irritation and congestion of the motor nerve centers. It is stated that an atrophic condition of the spinal cord, pons varolii, crura or medulla oblongata has been found in several careful dissections of those in whom the disease has proved fatal, and also sclerosis and patches of gray degeneration. It is possible that in some cases *multiple sclerosis* may be mistaken for paralysis agitans. The former disease, however, rarely occurs after thirty years of age and generally between twenty and twenty-five years, and is more common in women than in men, while the latter disease generally attacks the male sex more frequently. The earliest symptoms of multiple sclerosis is rhythmical tremors, but this trembling generally disappears as paralysis supervenes. The eyes are involved, the vision being indistinct

and double vision occurring. The speech is slow and drawling; vertigo is a marked symptom; paresis of the lower limbs, terminating in true motor paralysis, is a marked symptom. There is contraction of the limbs; the general expression changes and the mind becomes weakened, and finally death occurs from failure of the nutritive function. It will be seen that, aside from the tremblings of head, neck, trunk and limbs, which come on *only when the muscles are being exerted*, in disseminated sclerosis, the two diseases have no feature in common. The following case, interesting by reason of the rarity of recoveries, occurred in the person of a Mrs. E., aged 50, resident of New York city and the superintendent of one of our charitable institutions, and it serves to illustrate these cases very well. The disorder had come on gradually, as the result of domestic unhappiness and grief, and had finally culminated in a condition of sub-acute mania, complicating the case very seriously. At first I declined to take such a case, and gave the ladies who were interested in the patient a very unfavorable prognosis concerning it. I finally agreed to treat her for one month, her friends agreeing to remove the patient at the expiration of that time if I could effect no improvement, which I certainly did not expect to be able to do. At the time of her admission the trembling was incessant and involved all the limbs. There were delusions of suspicion and dread and fear of persecution—in other words, marked mental disorder. There were hallucinations of sight and hearing. There would be exacerbations of the tremblings, due to emotional disturbance. There was marked muscular rigidity and contraction, so that the head was thrown forward and fixed, and the trunk was also bent forward.

Walking seemed very difficult and also talking. The muscular force and the cutaneous sensibility were normal, so far as I could ascertain. There was marked tremulousness of the tongue when protruded. The trembling at first attacked one hand and arm, and gradually spread all over the body. I regarded my patient as hopelessly incurable. I however directed warm baths with cold affusions to the head at night, opened the bowels freely with a mercurial cathartic followed by salines, and then put my patient practically on a milk diet and secluded her from all society save that of her nurse, and directed the latter to administer three times a day drachm doses of sodium bromide and tincture of hyoscyamine, and I soon found to my surprise that my patient was improving very much. Electricity in the form of central galvanization and also a bi-temporal current were employed. The mental excitement soon began to disappear, the muscular trembling gradually subsided very much in proportion as the mind became quiet, and at the end of one month I saw that my patient was rapidly improving, contrary to all my expectations. I accordingly allowed her to take moderate exercise in the open air and put her on a full diet. The rigidity and contraction of the muscles disappeared gradually, the gait becoming assured, the head coming up erect and also the trunk. The speech lost its tremulousness and the face assumed a much more bright and intelligent expression. At the end of the second month all mental disturbance had passed away, the mental faculties remaining normal. I now discontinued the use of the sodium and hyoscyamine and also the central galvanization, substituting instead the induced current in the form of general Faradization, using it as a nervous stimulant and

tonic. I considered that by the constant current I had removed the nutritive defect in the central nervous system, improving the tone and nutrition, not alone of the brain and cord, but also of all the deeper tissues of the body. A tonic mixture containing quinine, phosphorous and strychina was now ordered and the patient's weight increased markedly during the third month of her treatment. At the expiration of the third month she was discharged perfectly well, not a trace of trembling being visible in muscular action, speech or gait. The mental faculties were pefectly restored. The patient, against my advice, returned to her laborious post of duty and has since remained perfectly well. I do not know that I should in another case get such a favorable result. I am afraid not, but should certainly work with more expectation of such result than I have previously entertained. My success in this case, however, warrants me in expressing the hope that such cases may have the benefit of long-continued applications of electricity, with bromide of sodium in drachm doses in half a tumbler of water thrice daily, between meals, and either the fluid extract of hyoscyamine, the tincture or hypodermic injections of $\frac{1}{30}$ gr. of the crystallized extract of hyoscyamine. Prof. Charcot considers it probable that the morbid anatomy of many of the cases that go on to a fatal termination, consists of obliteration of the central canal of the cord by increase of its epithelial lining, overgrowth of the nuclei which surround the ependyma and marked pigmentation of the nerve cells, principally those of Clarke's posterior vesicular columns. In my case, if the paralysis agitans had depended upon an atrophic condition of the spinal cord, pons varolii, crura or medulla oblongata, or, in other words, had

depended on organic changes, I do not think a cure could have been obtained. On the other hand, I am inclined to think that if there was degeneration, due to the new formation of connective tissue compressing the cord and nerve structures, the constant current, *perhaps*, by its catalytic effect could have had the power to remove such new formation, freeing the compressed nerve structure. My case, moreover, may have depended on congestion of the nervous substance or the membranes of the upper part of the medulla spinalis, oblongata and pons, which had not gone on to sclerotic atrophy and the galvanic current unquestionably would have relieved that condition permanently. I not only had to combat disease of the motor centers but also of the intellectual centers. The disease, I presume, commenced in the motor tract of the cerebrum, since the arm was first affected, and soon the corresponding one. I considered my case, however, probably to have been one in which there was congestion, weakness and irritability and instability of the molecular nerve structure of the nerve centers, owing, perhaps, to mal-nutrition, and that the disease was functional in character rather than organic. If so, then we may say that there are curable functional cases of paralysis agitans. My patient had not a rheumatic diathesis or any other morbid diathesis which could have disposed her to the disease. The case was to me exceedingly interesting.

Dr. J. Russell Reynolds reported in the London *Lancet* of Dec. 3d, 1859, a case of paralysis agitans cured by the constant or galvanic current. The patient was a married man and father of twelve children, aged 57, carpenter by trade. For the five years previous to Dr. Reynolds seeing him, he had suffered much anxiety respecting his children, although

Dr. Reynolds did not feel certain that that was the cause of the paralysis agitans. Occasional tremor of the right arm and leg appeared first about two years previous to treatment, and seemed to be increased by anything requiring expenditure of nervous power. These symptoms had much increased just before treatment was commenced by Dr. Reynolds. The arm was worse than the leg, and in it the motion most constant and most extensive was that at the shoulder joint. The involuntary movement of the arm could be arrested by the patient lying on the sofa and pressing the forearm against the ilium; but any attempt to move the limb voluntarily at once reproduced the shaking, although the patient remained in the recumbent position. The movement was instantly arrested when the doctor firmly grasped either the forearm in any part of its upper two-thirds, or the arm in its lower third. This did not seem to be a mere mechanical arrest of the movement, for it could not be effected by holding the wrist; and the jerking recommenced if, while the extremity was grasped in the manner described, the patient made any attempt at a voluntary movement. The mental condition of the patient and his general health appeared unaffected. The sensibility was unchanged in the right upper extremity, there was no deviation of the tongue nor distortion of the features. The patient could walk well, and without dragging either leg. A continuous galvanic current was applied to the arm and forearm, the movements of the latter being at the time arrested by pressure. At the end of five minutes he could execute voluntary movements without the least tremor, and emotional excitement failed to reproduce the jerking. The temperature of the two arms, examined after the current had been

passing for half an hour, was equal. The involuntary movements did not return until three hours after the current was discontinued, they then reappeared and continued throughout the evening; stopped at night, but returned on the following morning.

"Oct. 6. The current was applied while the arm was in violent movement, but in two minutes it became perfectly still: application continued for one hour.

"Oct. 7. Last evening there was no jerking nor tremor for five hours after the current was discontinued; then it commenced, but stopped spontaneously in about half an hour, and during the remainder of the evening there was nothing more than very trifling tremor. The jerking has returned this morning, but it is much less than on the first day of observation. There were but 20 alternations in fifteen seconds, and the range of movement is from three to four inches. The movement, therefore, is only 86 feet per second—less than one-eighth of what it was three days ago. The current was applied on the 7th, on the 8th and 10th, and after the 10th—*i. e.*, after five applications—the spontaneous jactitation completely ceased. When any weight is held in the hand and it is lifted towards the mouth, there is tremor, but this is slight, is not more than has occurred for the last two years, and it immediately ceases when the effort is discontinued. The arm and hand are weak; every movement can be executed by them voluntarily, but such movements are feeble.

"28th. Has written me a letter in a good and legible hand. The current was applied about every other day for an hour until Nov. 10th, and during this time there was

steady increase in the power of the limb and the jactitation did not return. No medicine of any kind was given.

"Nov. 12th, quinine and gin was ordered.

"15th. W. F. is in perfect health; there is no jactitation and only the slight tremor already described, when the hand with something in it is raised toward the mouth. The current employed in this case was from Pulvermacher's chain battery of 120 links."

34 West 33d street, N. Y.

A CASE OF LYMPHADENOMA. *By* J. W. NELSON, M.S., M.D., *Winnetka, Illinois.*

The disease commonly known as Hodgkins' disease, also known as lymphadenoma, pseudo-leueocythæmia, etc., although a comparatively rare disease and not often met with by the general practitioner, yet occurs with sufficient frequency to merit careful study, inasmuch as its etiology is so little known, its treatment uniformly ineffective and its results inevitably fatal.

Up to the present time those who have studied the disease have been unable to go beyond a certain point, nor will the cause of lymphadenoma, in all probability, ever be discovered until the origin of the red and white blood corpuscles has been found, and also the relation between the two established.

The object of this paper, however, is not a discussion of the various theories concerning the cause of lymphadenoma, but simply to record the history of a case now under the care of the writer, and to draw conclusions from it. However, a short review of the disease and its treatment may not be out of place.

Lymphadenoma manifests itself chiefly in the lymphatic system. There is an enlargement of the lymphatic glands by a deposit of adenoid tissue, also a deposit of the same kind along the course of the lymphatics and often in regions where there are no glands, but simply minute lymph channels. These enlargements vary in size and density, the more newly formed being less dense than than those of older growth. They vary in size from that of a pea to a hen's egg and even larger, a few have been recorded weighing two or three pounds. The posterior glands are usually the first affected, though not invariably, the affection spreading next to the other glands of the neck, then to the axilla, mediastium mesentery and inguinal region.

In some cases the enlargement is confined to only one or two groups of glands, but the tendency is to involve the whole lymphatic system. Apart from the phenomena exhibited in the lymphatic system, the most interesting features of the disease are to be seen in an examination of the blood. Excessive anæmia is always present in lymphadenoma. But more will be said with regard to the conditions of the blood further on.

In this disease, as in other stubborn affections, the whole pharmacopœia has been searched for remedies with little or no success. Nearly every drug classed as an alterative has been used, the best results being obtained from the use of mercury, iodine, iron, phosphorus and arsenic in their various forms. Of all these, the best results are claimed from the use of arsenic in the form of the liquor potassii arsenitis in large doses.

Extirpation of the enlarged glands has been resorted to with but little benefit, the glands in other localities invariably enlarging.

The following case came under my care Sept. 16, 1885:*

Mary C.; child, 6 years old; lives with her parents at — W. 22d street, Chicago. Locality in close proximity to south branch of Chicago river, low quarter of the city and badly drained. Parents, Irish. Father, day laborer, very intemperate in habits. Mother apparently healthy. No history of scrofula, tuberculosis, syphilis or lymphadenoma in the family. Found the child markedly anæmic, poorly nourished, and with hard tumors in the lymphatic glands and in the course of the lymph channels of the right side of the head and face. The cervical and submaxillary glands of the right side especially large and hard. Right eye closed by hardening and thickening of both lids. Especial thickening over the supercilliary ridges and in line of the temporal artery. Counted forty distinct enlarged glands, beside deposits elsewhere, the tumors ranging in size from that of a pea to a small hen's egg, the largest being in the right submaxillary region. On palpation could find no enlargement of spleen or liver. Percussion gave dullness in the median line over the thorax. Auscultation gave heart sounds normal, but rapid; mucous râles over the larger bronchi. From the constant cough, and dullness over the median line of the thorax, concluded that the mediastinal or bronchial glands were involved. Temperature, 103°; pulse, 168; respiration, 28. Rapidity of pulse due to excitement. Skin dry and scaly and covered with small sudaminous vesicles. To reduce the temperature, gave

R.—Potassii nitratis..... 6 c. c.
Spts. ætheris nit..... 16 "
Liq. ammoni acetat..... 16 "
Aquæ, q. s. ad.....128 "
M. f℥ss. every two hours.

*The first enlargement was noticed in May, 1885.

Sept. 17.—Child apparently better; could not take temperature on account of broken thermometer. Pulse, 140. Discontinued the above prescription and gave the following:

℞.—Liquor. potassii arsenitis.....fʒiv.
Syr. simp., q. s. ad .....fʒi.
M. fʒi twice a day.

Sept. 22.—Child apparently better, sitting up; no appreciable fever. Pulse, 126. Some of the glands seem slightly softened and reduced in size, especially those in axillæ and groins.

Sept. 24.—Child a little stupid. Temp., 98.8°; pulse, 130, runs up at the least excitement. Appetite good. Marked decrease in size of axillary glands. Increased the amount of Fowler's solution by giving three doses per day. Also gave the following:

℞.—Tinct. ferri chloridi.....fʒiii.
Syr. simp., q. s. ad.....fʒiv.
M. fʒi t. i. d. after meals.

Ordered the mother to give the child a thorough bath every day, to use massage over the enlarged glands and to lay the child naked for at least an hour in the day in the direct rays of the sun.

Sept. 26.—Pulse, 120; temp., 98°. Skin dry and still covered with small vesicles. Glands much reduced in size.

Sept. 28.—Pulse, 92; temp., 98.4°. Child bright, appetite good, still farther reduction in the size of the glands. Increased the dose of Fowler's solution to 10 drops three times a day.

* * * * * *

Oct. 3.—Pulse, 150; temp., 98.5°. Appetite good.

Glands smaller than when last seen. Fowler's solution beginning to show systemic effects. Discontinued it.

Oct. 5.—Pulse, 160; temp., 96.5°. Effects of the arsenic cease to show; gave :

℞—Acidi Phos. Dil. ..... ℥iv
Syr. Hypophos. Comp. ..... ℥ii
Syr. Simp., q. s. ad ..... ℥iv
M. ℥i t. i. d. before meals.

Oct. 8.—Pulse, 144; temp., 98.5°. Tongue clean. Glands at a stand-still. Renewed Fowler's solution—10 drop doses t. i. d.

Oct. 12.—Pulse, 152; temp., 98°. Bowels quite loose. Discontinued the arsenic; renewed the phosphoric acid mixture and gave Emulsion I of Dispensary Formula.

Oct. 17.—Pulse, 132; temp., 98.5°. Renewed the arsenic. Glands decreasing slightly.

Oct. 20.—Pulse, 135; temp., 98.5°. Glands in axillæ and groins reduced almost to natural size. In left groin one gland still about the size of a chestnut, also one of the same size in the right axilla. Patient able to see out of the right eye that was formerly closed. Glands in submaxillary region still remain hard.

Oct. 23. On examining child's mouth found three badly decayed teeth, and thinking they might be a source of irritation ordered them extracted.

Oct 26.—Mother took the child to a dentist and had two teeth in the left lower jaw extracted. Child again beginning to show symptoms of arsenic poisoning. Discontinued Fowler's solution and renewed the phosphoric acid, etc.

Nov. 1.—Found the glands rapidly increasing in size;

glands in left submaxillary region near where the teeth were extracted much enlarged. Eyelids of left eye becoming thickened. Renewed Fowler's solution.

Nov. 5.—Glands increasing with great rapidity in spite of the arsenic. Discontinued it and gave compound syrup of the hypophosphites.

Nov. 12. Glands as large as before treatment. Left eye half closed; glands beginning to press upon the trachea. Sternum beginning to be pressed forward by enlargement of either mediastinal or bronchial glands. Breathing growing croupy. Child breathes more easily with head thrown back.

* * * * * *

Dec. 2.—Pulse, 150; temp., 98.5°. Breathes entirely through the mouth. Glands enormously swollen. All the tissues of the face thickened and hardened. Breathing croupy and labored. Tonsils somewhat enlarged. Right eye completely closed and left eye nearly so. Skin almost transparent in some parts and scaly in others.

Anæmia profound; child wasting in flesh. Very hyperæsthetic and cannot bear to be handled. Appetite fair. Hearing somewhat affected.

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Dec. 9.—Pulse, 120; temp., 98.5°. Glands still enlarging. Examined urine and found it normal.

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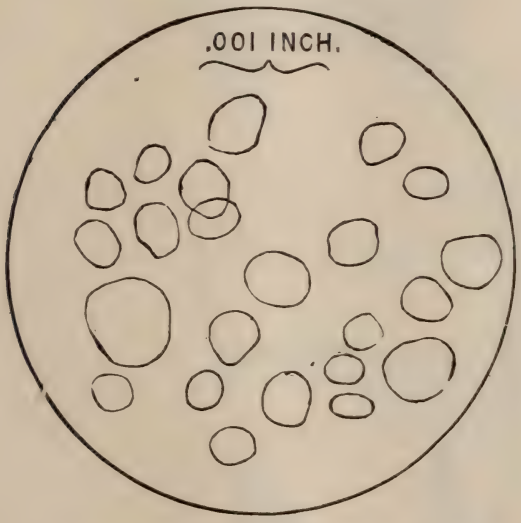
Dec. 22.—Took child to South Side Dispensary. Dr. Lester Curtis examined the blood microscopically; found it pale and watery; coagulates rapidly. Relative quantity of red blood corpuscles greatly diminished. Slight increase,

if any, white corpuscles. Red corpuscles very irregular in size, many of them not more than one third or one fourth natural size; the white corpuscles appear like a mushroom in shape and covered on the surface with coarse granules which after two or three hours leave the corpuscle and are found floating in the plasma.

The following is a representation of a field of the red corpuscles drawn to scale.

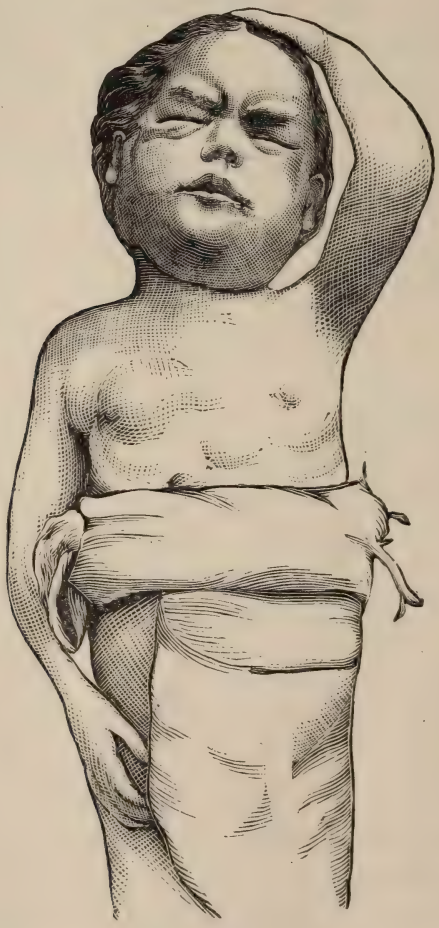


The picture at the right shows a white corpuscle not drawn to scale, but showing its coarse, granular appearance, also its mushroom shape.

Jan. 4.—Pulse, 144; temp., 99.5°. Bowels very loose. Glands still enlarging. Left eye nearly closed. Sterum somewhat protruding.

Jan. 12.—Pulse, 108; temp., 99.5°. Increase in difficulty of breathing. Eyes closed. Hearing very dull. Appetite poor.

Jan. 25.—Took child to a gallery and obtained a photograph.



Child able to see a little out of left eye. Breathing difficult for the last two days.

From the foregoing data very little that is new can be deduced, unless it be the highly granular appearance of the white corpuscles and the great irregularity in size of the red.

With regard to the treatment, there is fair ground for belief that if a case of lymphadenoma could be diagnosticated in its incipient stage, a free use of arsenic as an alterative, and iron to relieve the anæmia, would result in a permanent cure.

EDITORIAL.

CHICAGO MEDICAL SOCIETY.

An excellent precedent in the conduct of debates before the CHICAGO MEDICAL SOCIETY has been recently established by the PRESIDENT.

Special invitations, requesting participation in debate, have been sent to the various members of the local profession, who are supposed to be most conversant with the topic under consideration. Irrelevant discussion is thus cut off to a very great extent, and the author of a carefully prepared paper secures the critical attention of a jury of his peers.

The interesting character of the transactions at the last regular meeting,—when Professor A. Reeves Jackson's paper on "The Intra-Uterine Stem in the Treatment of Flexions" was read,—was due largely to this welcome innovation.

THE MEDICO-LEGAL SOCIETY OF CHICAGO.

Attention was called in the May number of the JOURNAL to the efforts of Dr. A. Reeves Jackson, Dr. Edward J. Doering and others in the establishment of a "Physicians' Protective Association."

On the fifteenth of May, 1886, an organization was effected, the association being termed the "MEDICO-LEGAL SOCIETY OF CHICAGO."

The object of the SOCIETY, as specified in the Constitution, is:

"The investigation, study and advancement of the science of medical jurisprudence, the punishment of unprofessional and criminal practice by members of the medical and legal professions, the prevention of blackmailing, and the procuring of such legislation as may be necessary to secure the ends above enumerated."

"Regular meetings shall be held on the first Saturday in September, December, March and June, and ten members shall constitute a quorum."

Over one hundred names have already been enrolled upon the list of members, and the profession is keenly alive to the importance of the organization. The adoption of the title, "Medico-Legal Society," obviates at once many of the objections, urged with force, against a PHYSICIANS' PROTECTIVE ASSOCIATION.

CHICAGO AS A MEDICAL CENTER.

On the fifteenth of June, the first session of the POST GRADUATE MEDICAL SCHOOL OF CHICAGO will commence. The CHICAGO POLYCLINIC will begin its courses of instruction for practitioners of medicine early in July. The establishment of these two schools marks a significant advance in the importance of Chicago as a medical center.

The large amount of clinical and pathological material placed at the command of these institutions will enable the practitioner to pursue his studies with ease and profit.

SOCIETY REPORTS.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

LXIV Meeting, Friday, March 19th, 1886.

I.—Presentation of Instruments and Pathological Specimens.

II.—Adjourned Discussion of Pelvic Cellulitis.

III.—MILLER. *Report of a Case of Epithelioma of the Uterus; Treated by Mercuric Nitrate; Result Six Years After Treatment.*

I.—THE PRESENTATION OF INSTRUMENTS AND PATHOLOGICAL SPECIMENS.

PROFESSOR W. W. JAGGARD wished to call attention to a new instrument and a pathological specimen, in order to remind the Fellows of the Society of the first regular order of business, and on account of the intrinsic interest the instrument and the specimen possessed.

1.—Professor Alex. J. Stone's Pelvic-outlet Forceps.

Professor Alex. J. Stone, of St. Paul, has designed a very valuable pelvic-outlet forceps.

The characters of the instrument are:

Length, 24 cm. (Spoons, 14 cm., handles, 10 cm.)

Fenestra, length, 12 cm., width, 3.5 cm.

Cephalic curve, 8 cm.

Weight, 210 grammes.

English lock.

The instrument is bent backwards on its long axis, so that the angle, at the junction of the spoons and handles, is about 160°. The object of the perineal bend is to maintain flexion of the head during its passage through the vulvar orifice.

PROFESSOR JAGGARD had recently employed Professor Stone's forceps in a case in which the head was arrested at the vulvar orifice, the result of uterine inertia caused by a large intra-mural fibroid. It was possible to apply the forceps in the left lateral position without the patient's knowledge. He thought the instrument possessed obvious advantages over Dr. Sawyer's excellent pelvic-outlet forceps.

2.—Puerperal Uterus and Adnexa.

The pathological specimen was the uterus and adnexa, removed from the body of a patient who died at the Cook County Hospital on the third day of the *puerperium*. Dr. H. H. Frothingham, one of the resident obstetricians, had kindly placed the material at the speaker's disposal. The patient, thirty years old, multipara, was admitted to the Hospital on the thirteenth of November, 1885, and gave a history of forceps delivery of a dead child, with perineal laceration, on the eleventh of November. Temperature, 103.4° F.; pulse, weak and rapid; respiration, shallow and frequent; tongue, dry and brown; pulmonary œdema; rigors; profound prostration.

Abdominal tenderness, tympanites, dullness in both flanks; two tumors, the size of a hen's egg, on either side of the vulvar orifice; *labia majora* apparently gangrenous; recent perineal laceration; foul odor from vagina; complete cessation of lochial secretions.

The patient died soon after admission to the Hospital.

Autopsy.—Both pleural cavities about half filled with sero-

purulent fluid and flakes of lymph; lungs œdematous; pericardium contained three ounces of fluid similar to that within the pleuræ; *endocardium apparently normal*; myocardium soft and friable; no metastatic abcesses could be found. Peritoneal cavity contained about one gallon of sero-purulent fluid, with flakes of lymph; intestines contracted, but no adhesions; liver enlarged, congested, giving evidence of extensive fatty degeneration; *spleen*, of *normal size;* kidneys, cortex giving evidence of fatty degeneration, pelves injected and intensely hyperæmic; peritoneum injected.

The uterus was of a size, corresponding to the third day of the *puerperium*. The ring of Bandl was plainly demonstrable. The endometrium exhibited the pseudo-membranous necrosis, clearly described by Birch-Hirschfeld and and other pathologists by the term *endometritis diphtheritica*.

The mucous membrane of the vagina showed similar diphtheritic changes. Pus oozed through both Fallopian tubes. The left ovary and tube were intensely injected. Puerperal ulcers were visible on either side of the vulvar orifice. The tumors on either side of the vulvar orifice proved to be caused by hæmorrhage into the perivaginal connective tissue, —pudendal hæmatomata. No examination for micro-organisms was made.

DR. JAGGARD thought the case was a typical example, both as regards the clinical course and anatomical findings, of that form of puerperal fever, described by Buhl in 1861, as *Puerperal Fever without Pyæmia*, (endocolpitis, endometritis, salpingitis, peritonitis—subsequently pleuritis and pericarditis.) The entire absence of splenic tumor was worthy of particular notice. Carl Braun has justly attached great significance to this sign,—even going so far as to call it path-

ognomonic. The apparently normal state of the endocardium was remarkable.

II.—ADJOURNED DISCUSSION OF PELVIC CELLULITIS.

PROFESSOR A. REEVES JACKSON stated that he understood from the notice received that he was expected to introduce the general subject of pelvic cellulitis. If anything should cause a sense of humiliation to come to us as medical men it was the impression which was forced upon us of how little accurate knowledge we had upon even the most ordinary topics when we attempted to study any medical subject in detail. In order to introduce the subject of pelvic cellulitis he should say at least something about its pathology, diagnosis and treatment. In regard to the first of these subjects, Professor Thorburn says that he inquired of several experienced anatomists whether they knew of the existence of cellular tissue in the broad ligaments, and they replied that they did not know of it except from current gynæcological literature; of course that was because they had not investigated the subject practically; we do know there is a substance called cellular tissue in the pelvis, that it exists in and between folds of the peritoneum forming the broad ligaments between the uterus and the bladder, and also posteriorly to the uterus. When we speak of cellulitis we mean an inflammation affecting this tissue and all that is connected with it; that is, its lymphatics, glands, blood-vessels and nerves. Some think the starting point is nearly if not always in the lymphatic glands, so that here in the outset we are met with this evidence of lack of certain knowledge. He thought it did not matter much to us as practitioners whether that layer called cellular tissue is af-

fected in one portion only or whether other structures are also involved. The diagnosis presents difficulties, as we all know. In the first place, we do not always know when the disease is present, and in every stage we feel doubt as to whether this disease or some other is present; sometimes even when it goes on to its later stages we have doubt. The first evidence of this disease consists in an effusion of serum which produces a hardness in the part and which becomes more and more marked as the disease progresses; this may be of longer or shorter duration; it may disappear by absorption; or it may not disappear at all, but go on until the effusion becomes pus, forming pelvic abscess. Pelvic cellulitis and pelvic peritonitis frequently exist together, and as it does not affect our treatment of the case in the early stages this fact does not make much difference to us as practitioners. Coming to the question of treatment, he had always felt a great deal of doubt as to the efficacy of the usual means employed—opium, digitalis, quinine, etc.; that is, as to whether they have any controlling influence upon the progress of the disease. From the very nature of the inflammatory process he scarcely thought these things do more than simply palliate the symptoms. Prolonged hot water douches are doubtless remedial, and may abort the disease. Latterly, interest has been more centered in the treatment of the condition when it has advanced to the stage of abscess. Heretofore the treatment has been notoriously unsatisfactory, so that cases have gone on for weeks, months and years, the woman being constantly subject to discharges of pus, and the remedial means have done little more than assist nature in the escape of the fluid. But during the last few years, since

attempts have been made to treat the disease radically by surgical means, there has been offered an additional and efficacious method of dealing at least with some of these cases. He alluded to laparotomy. The success that has been attained in this way should lead us to look upon it with favor. He thought, however, that where radical surgical means are resorted to there is danger of too frequently performing operations dangerous in themselves, to relieve a disease which perhaps would not end life, although rendering the patient an invalid during her lifetime. He believed the discussion would be profitable if it should largely take the course of considering this latest and most formidable measure of treatment. He had read the account of Prof. Fenger, giving an account in detail of three operations made by himself; two of the operations were followed by death, which was attributed to some other disease, co-existent perhaps with the abscess itself; the other was successful. You are familiar with Lawson Tait's treatment for these encysted collections of pus. His success is simply marvelous. In 1883 the *British Medical Journal* published an account of twenty-four cases in which he had been successful, and in a letter which Dr. Jackson had received from him recently he said that up to that time he had operated successfully on thirty-two cases.

This was all the introduction Professor Jackson had to offer, and it opened the whole subject. He was reminded that he had not stated whether he approved of abdominal section for this cause. He said he did, unhesitatingly, and thought there was as good reason for operating in inflammation of the pelvis as in any other disease which produces life-long invalidism, provided it were not curable by other means

Laparotomy offers a method which is perhaps applicable to a comparatively small number of cases, and yet here it is the only remedy, that is, in cases of long standing in which the abscess cavity cannot be otherwise reached for the purpose of drainage, and where the women is of such an age that makes it reasonable to suppose she will suffer for many years. He considered it a dangerous operation, and there had been errors in diagnosis. Mr. Tait is justified in his bold method of diagnosticating abdominal disease by laparotomy. He follows it up with removal of the disease. Where the diagnosis is fairly established he believed that laparotomy is a proper procedure as a last resort.

PROFESSOR W. H. BYFORD thought there was not much more to be said than had been said by Professor Jackson, who had given an admirable *résumé* of the subject in all its bearings in such a way as to set it before the Society with clearness, and he approved of all Professor Jackson had said, without exception. Professor Byford had already said to the Society what he had to say upon the subject of pelvic abscess, and what he thought of the conditions of the operation of laparotomy for the abscess. He could not get rid of the idea that the operations performed by Lawson Tait were cases in which the abscesses were largely in the abdominal cavity, and were not pelvic abscesses, properly speaking—certainly were not confined to the pelvis; and he believed from what he had seen in regard to his cases that almost all were encysted peritoneal, instead of encysted pelvic abscesses. In speaking upon the subject before, he had taken the stand that the operation of cutting into the peritoneal cavity for the purpose of going down into the pelvis when the abscess did not reach above the pelvic rim, was not justifiable in many instances, if

at all. Where there has been a bar thrown out by the effusion of lymph in the peritoneal cavity so as to isolate the purulent collection and it extends up into the abdominal cavity, then he had no doubt of the propriety of the supra-pubic operation. He had recently seen an abscess, which formed mainly above the pelvic brim, open into the rectum at the top of the pelvis, taking its course above and across the *fundus uteri* and opening in the side of the rectum. The collection of pus was entirely above the pelvis, and it was necessary to cut through the muscles and fascia to get into the pus cavity and then establish a process of drainage through the rectum. It would have been impossible in that case to have effected the opening through the vagina.

PROFESSOR J. H. ETHERIDGE said he had had no experience in opening the abdomen for treatment of abscess in the pelvis. He had seen one abscess opened through the abdominal wall, which had a spontaneous opening into the rectum. It was done at the Presbyterian Hospital about a year ago. The top of the abscess could be felt through the wall, and an attempt was made to find the opening, wash it out and inject it; but this being regarded as impracticable, abdominal section was decided upon, and a very curious combination of pathological conditions was discovered. The abdomen was opened, and a protruding something was discoverable; there was a discharge of perhaps an ounce and a half of serum, then it was cleaned. It was really a cystic growth, and upon introducing the finger another cyst, apparently, was discovered, that was opened and thoroughly evacuated, then another protruding by it was discovered, which was found to be the abscess cavity itself. That was opened and cleaned out and a drainage tube introduced and fastened to the wound, and the patient dressed, but she died within twenty-four hours. Post-mortem examination was

made, and the track of the opening readily marked out. He had seen pelvic abscesses that opened in all directions through the abdominal cavity, into the bladder, vagina, and rectum, but never saw one that opened into the uterus. He saw at the Woman's Hospital an abscess that opened through the vagina and abdominal wall. The patient died. Dr. Etheridge said he had under treatment a pelvic abscess that opens into the rectum, in which general cellulitis is present. About once in six weeks the woman would have a fever, and after undergoing a great deal of suffering, nights of pain in which she would have to take large quantities of opium, there would be a discharge of pus into the rectum. She was put on tonics, and her general health improved greatly. Now she goes a great many weeks at a time without any return of the symptoms. A slight discharge of pus is present with every discharge from the bowels. It seemed to him as if the true estimate to make of the justifiability of laparotomy for abscesses is the ability to reach the top of the abscess through the abdominal wall, and where it cannot be reached it seemed to him that purulent discharge of the abscess into the abdominal cavity would surely take place.

DR. EDWARD WARREN SAWYER thought it a matter of regret if the discussion were to conclude without the special indications being given for a line of treatment in given cases. For his own satisfaction, he would like to have an answer to the following questions: First, in case of pelvic abscess, in which there is already an opening established, either by the bowel or by the bladder, is laparotomy ever justifiable? Second, in a case of supposed pelvic suppuration, without any external manifestation, as an opening through the bowels or bladder, is laparotomy ever justifiable?

DR. A. H. FOSTER said he had not been present long

enough to learn the scope of the discussion, and had but little to add. He did not recollect any case of pelvic abscess in his experience, although it was that of constant care of cases of pelvic cellulitis, more or less extensive. He always expected to have a larger crop of such cases, of more or less gravity, at this time of the year than at any other, especially those cases that are non-puerperal, but are menstrual. The cause seemed to be carelessness in regard to clothing, especially of the feet, and the exposure which comes from the varying weather in this climate, hot and cold, wet and dry. In regard to treatment of these cases, his treatment did not differ from others. He always relied on prompt doses of mercury and opium until the acute symptoms subsided; fomentations externally and hot douches internally, and then followed either with the muriate of ammonium or the iodide of potassium, reducing the opiate as fast as possible and continuing quinine or its substitute.

DR. PHILIP ADOLPHUS said that in the absorption of recent inflammatory deposits in the pelvis, he depended on the action of the skin, kidneys and bowels, stimulated by proper medication. In regard to hot douches, it depended whether the surroundings of the patient are such that they can be given properly; if otherwise, to attempt it will result injuriously. If symptoms point to suppuration, and fluctuation can be felt *per vaginam*, the use of the hypodermic syringe will disclose serum or pus. If serum, he trusted to absorption; pus, however, necessitated a speedy incision, with subsequent drainage, etc. If formation of pus is suspected at any time, it is best to look for it, and if it cannot be found, it is best to wait for its pointing. However, if the patient is in great danger, laparotomy is indicated.

DR. F. E. WAXHAM was sorry that he had not been able to

hear the whole discussion. He was reminded, quite forcibly, of a laparotomy upon one of his own patients; however, it was not a case of pelvic cellulitis—it was acute peritonitis, with effusion within the abdominal cavity. This patient presented all the characteristic symptoms of peritonitis, intense abdominal pain, exceeding tenderness and great abdominal distension; the patient passed from bad to worse, and finally fluctuation was detected in the lower portion of the abdominal cavity. An eminent surgeon was called in consultation, who recommended laparotomy as the only hope of saving the patient's life. It was supposed there was pus within the abdomen, and, although very feeble and greatly exhausted, it was considered proper to give the patient the benefit of the operation. Frequent hypodermic injections of brandy were given, in order to support the flagging pulse during the operation. The abdomen was opened, but no pus was discovered in the abdominal cavity; a thin, serous fluid was discovered. The patient barely survived the operation, dying about six hours later from prostration and shock. In contrast to this patient, he remembered another—a case of peritonitis in a child—that had all the characteristic symptoms of acute, violent peritonitis. This patient was seen by Dr. W. H. Byford, who gave valuable assistance in the treatment. The child, who was but seven years old, was obliged to take twenty drops of tincture of opium every hour and a half for two days at a time, in order to control the intense pain, and it seemed as if it was impossible for it to live from one hour to another; fluctuation was found more marked in this case than in the other, but, notwithstanding all these unfavorable symptoms, this little patient made a gradual, slow, tedious, but yet permanent recovery. He believed we ought not to subject a person to so dangerous an operation as laparotomy without

proof of the presence of pus. It seemed to him that a serous fluid might become absorbed and the patient recover, where an operation would very likely cause death.

PROFESSOR CHARLES WARRINGTON EARLE said he had nothing new to add in regard to the ordinary general treatment of pelvic cellulitis or abscess, but he was practically interested in exactly the questions that had been asked by Dr. Sawyer. He spoke of the terrible cases which he supposed all physicians meet occasionally. He had probably seen half a dozen during his fifteen years of practice. These cases have a history of pelvic pain and inflammation, and finally a discharge of pus, which continues for weeks and months, and sometimes years. At last some of us are called in and find that the woman is suffering from chills, a high temperature, feeble pulse, and is greatly exhausted. He wanted the older members to tell what should be done with such cases. Is there any hope for a woman in this condition? A few months ago he was called in consultation with another physician to see a lady who had a constantly discharging abscess, until she was nearly dead from exhaustion. The question in his mind was,—and it was one he would like to have discussed,—will it do any good to open the abdomen of such a woman and clean out those pus pockets? Have we any experience which will give us a moderately safe rule by which to proceed in such a case, where death is absolutely certain if something out of the usual line is not done? He hoped some light would be thrown on this question.

DR. HENRY T. BYFORD thought that the treatment of the first stage had been spoken of too slightly. He had seen much irreparable harm done by the failure of physicians to promptly recognize and properly treat the acute attacks. There is no doubt of the positive influence of opium on the

peritoneal part of the inflammation, of sedatives on the arterial excitement, of absolute quiet of body (opium acts largely by quieting all motion in the bowels), and of the local application of heat. But he protested against the early indiscriminate use of the vaginal douche. He had known it to do decided harm.

He attributed the lack of hopefulness, in speaking of the management of suppurating cases, to the lingering influence of past experience. In the light of our present knowledge, the lines can be drawn much more definitely. A pelvic abscess should of course be opened wherever it may point, whether in the vagina, rectum, or under the skin. When the primary outlet is made though the skin, the treatment, being entirely antiseptic in character, leaves nothing to be desired; when made through the vagina or rectum, the outlet must be, as nearly as practicable, at the most dependent portion, for strict antisepsis being impossible, drainage should be perfect. Spontaneous primary openings through the cutaneous surface that do not admit of a thoroughly antiseptic management must be modified so as to admit of it; and openings through the vaginal or rectal walls, that do not secure adequate drainage, must be made to do so. The most troublesome of these abscesses are those that have formed an opening into the bladder or alimentary tube beyond reach, and do not completely empty themselves through it. When such is the condition, rather than cut through solid tissue by the vagina or rectum, we must, if the condition of the patient be critical, have recourse to laparotomy. But making an outlet through the abdominal walls is of questionable benefit, unless accompanied by the more important part of the operation, viz.: the obliteration of septic pockets and establishment of perfect drainage through the vagina or rectum. But there are some abscesses producing serious symptoms before pointing below or externally, which were

originally, or have become, abdominal or supra-pelvic in character. These, according to the latest experience, should unquestionably be evacuated by means of laparotomy, whenever they cannot be reached extra-peritoneally. But a large majority of them are hæmatoceles, very many of which could and should have been operated upon from below, before a threatening abdominal abscess had developed. Therefore, under proper and timely treatment from the beginning of the attack, but few cases of pelvic abscess would require laparotomy.

PROFESSOR W. H. BYFORD wished to make two or three remarks with regard to certain abscesses which had not been touched upon during the evening, viz.: such as do not break, do not discharge, but remain as chronic cavities for a number of years. He had had an opportunity of tracing three such cases for twenty-three or four years, and in each of them there had been found serous in place of pus cavities. He accounted for it in this way: the lining membrane is an ulcerated surface, and he thought that in some of these cases instead of the pus being discharged these surfaces underwent cicatrization and that there was then a cicatrized cavity in which there was an amount of serum that dissolved the pus corpuscles and thus causing their disappearance so as to leave nothing but a clear collection of serum—a serous sac. In the three cases mentioned, when the sac was opened it was found to contain serum instead of pus. He had been very much interested in them and followed them up until he had proved to his satisfaction that this change actually did take place; a cicatrization of the whole lining membrane, converting it into a non-suppurating cavity containing serum.

PROFESSOR A. REEVES JACKSON said, replying to the questions that had been asked in regard to those cases in which an opening of the abscess was already established, and when

the health of the patient was not unfavorably influenced by the discharge, he would let the woman alone unless he could so enlarge the opening as to establish a thorough drainage. And in cases in which there was no opening and in which there seemed to be evidence of the existence of pus, he would endeavor to find it with the aspirator needle introduced through the vagina or abdominal wall in preference to opening through the rectum. In case drainage could be established perfectly through the vagina and abdominal wall he would rely upon that. Professor Jackson said that he had failed to make himself understood clearly in regard to the estimate he placed upon the treatment of the early stages of pelvic cellulitis. He approved of the vaginal douche, hot applications over the epigastrium, and opium, the latter being his sheet anchor, more particularly in peritonitis than in cellulitis. He thought that in many cases by lessening the pain the pulse was reduced and the temperature lowered. He simply felt that these methods of treatment do not reach the bottom of the difficulty, but in the absence of anything better he had always used them. He had never used leeches but thought they might be beneficial. The blood is not withdrawn directly from the congested vessels, but its loss may affect the part as would venesection in the arm or elsewhere. In conclusion, in a case of pelvic abscess, when a woman was dying from rapid pulse, high temperature and the constitutional disturbance that these things always bring in their train, other means having been tried unsuccessfully, he would perform laparotomy, because in many of these cases, even if the operation should fail, the patient is not made materially worse. He had come to believe that constant invalidism is not preferable to death.

III.—PROFESSOR DELASKIE MILLER reported a

Case of Epithelioma of the Uterus; Treated by Mercuric Nitrate; Result Six Years After Treatment.

This case derives its interest from the extent of the disease, the treatment, and the condition of the patient since treatment and now.

Mrs. R., wife of a physician, came under my care about eight years ago, affected with epithelioma of the uterus. When the case was first examined, a considerable portion of the cervix had disappeared and the disease had extended to the *os internum*. The hæmorrhage had been frequent and severe, and the ichorous discharge was constant. The general health had been greatly impaired.

Treatment.—Granulations were removed by the curette and nitric acid was applied. Tonics and a generous diet were added.

After a few weeks she left the city for her home, feeling better.

She again visited the city three months later. The disease had made further inroads upon the tissues of the uterus, and upper part of the vagina. Chloride of zinc was applied and reapplied. Apparent improvement followed.

The patient came to the city at intervals for about two years, and submitted to active treatment for several weeks each visit. Still the disease evidently advanced, though the symptoms were occasionally suppressed. The vaginal portion of the cervix had quite disappeared. The cavity of the uterus became involved, and the disease was extending over the upper part of the vagina, both anteriorly and posteriorly. The appetite, digestion and general strength were impaired to that degree that it was manifest the patient would succumb unless the disease could be promptly arrested.

The acid nitrate of mercury was chosen as the agent, and in the presence of Professor Jackson it was applied in the following manner: A roll of cotton two and a half inches in length, and as large as the canal would admit, was saturated with the acid nitrate of mercury and introduced, reaching into the cavity of the uterus and filling the cervical canal, and a small portion left dependent into the upper portion of the vagina. This application was left undisturbed *in situ* for seventy-two hours, and undoubtedly it is to this fact that the result is due.

After the cotton was removed an extensive slough came away. The subsequent granulations appeared healthy, and in two weeks the patient left the city, since which time I have not seen her.

This last application produced more than a local effect, viz., a more severe ptyalism than that which affected this patient it would be difficult to imagine, and this was attended by an intensely jaundiced appearance of the entire surface of the body.

The following extracts are from a letter received a few weeks ago from the husband:

"*My Dear Doctor:* I received your letter a few days ago; must acknowledge my carelessness in not writing to you; have often thought I ought to write to you in reference to my wife's condition and state of health since her last treatment. The current of time has borne us along on smooth waters, all enjoy reasonable health, peace and prosperity. Mrs. R., during the past four years, with the assistance of my daughter, has performed the duties of a housewife, with all the cares and work, except when she has been laid up for a day or two with sick headache. She has it to-day the second time in eight weeks; am giving her a new remedy which has increased the intervals between the attacks two weeks. I do not think the

ulceration has ever appeared since the last treatment; have not examined her with speculum for several years. The uterus rests upon the perineum and seems heavier than it ought to be, and of late has been the cause of much disturbance of the rectum, requiring its replacement. She suffers some pain occasionally, and the menses are sometimes very profuse. There has not been any discharge of water since you applied the nitrate of mercury. It was heroic treatment, but I believe it saved her life, and I shall ever feel grateful to you and Professor Jackson for your kindness towards Mrs. R. and myself."

W. W. JAGGARD, M. D.,

2330 Indiana Ave., April 12th, 1886. *Editor.*

CHICAGO MEDICAL SOCIETY.

Stated Meeting April 19, 1886. THE PRESIDENT, E. J. DOERING, M. D., IN THE CHAIR.

PROFESSOR G. C. PAOLI read a paper entitled

THE REASONS WHY FEMALE PHYSICIANS ARE DESIRABLE IN INSANE ASYLUMS.

He demonstrated that the most eminent specialists in psychiatry in the United States are a unit in maintaining that female physicians are best qualified for treating the female insane. Many states have passed laws requiring one female physician to be allotted to each one hundred female insane in their asylums.

DR. J. C. KIERNAN said eminent authorities had already pointed the relation which exists between uterine disease and insanity. Popular opinion is growing in favor of the employment of female physicians in the treatment of the female insane.

DR. WM. T. BELFIELD reported nine cases of

IMPERMEABLE STRICTURE TREATED BY ELECTROLYSIS.

During the past two years he has treated thirty-seven cases of stricture by electrolysis; and except for strictures located within an inch of the meatus, and for strictures of large calibre elsewhere, considers it preferable to dilatation and urethrotomy for the following reasons: 1. It will pass through any stricture, however tight, rigid, long or tortuous. 2. As a rule it causes no pain, bleeding, chill, nor urethral fever. 3. It is always devoid of danger. 4. Its effects are lasting.

In certain numerous cases electrolysis is not merely a preferable, but really the only practicable treatment. Such are, 1, old, rigid, cartilaginous strictures in men of middle or advanced age, where urethrotomy is dangerous and dilatation ineffectual; 2, impermeable strictures; 3, tight and rigid strictures with perineal or scrotal fistulæ.

DR. BELFIELD then narrated the successful treatment by electrolysis of nine such cases. In three of these there was complete retention of urine, the bladder being distended above the umbilicus; these strictures were absolutely impermeable to urine from within as well as to instruments from without. In each case a No. 10 electrode (French) was passed into the bladder in less than twenty minutes, permitting the immediate introduction of a catheter. In each of these cases perineal section would have been, without the battery, inevitable.

In the remaining six cases Dr. Belfield, as well as other surgeons, had failed in attempts to pass bougies into the bladder; yet as the patients were still enabled to force a feeble, dribbling stream outward, these strictures were theoretically permeable, though practically impermeable. In these also a small electrode readily entered the bladder in one or two sittings.

In one case, seen in consultation with Dr. Miller, the patient had a series of tight, rigid, impermeable strictures, and twenty-seven fistulous openings in the scrotum and perineum; he had submitted to both internal and external urethrotomy, and to numerous unsuccessful attempts at dilatation; was urinating every half hour, day and night. In fifteen minutes a No. 10 bulb entered the bladder; that night patient rose only once to urinate, and for the first time in several years the urine flowed entirely from the meatus and not from the fistulæ.

The unfavorable results obtained by various physicians in their attempts at electrolysis have been caused by the use of improper currents, whereby heat was generated and the urethra cauterized, causing violent inflammation and even extensive sloughing. When properly used, the heat produced is insignificant; with six to fifteen small cells and a weak fluid, the cicatricial tissue constituting the stricture is dissolved away but not cauterized. Since cicatricial tissue is but scantily supplied with blood, and is therefore poorly nourished, it yields to a dissolving current which is insufficient to disturb the healthy urethral tissues.

DR. L. L. MCARTHUR said he had treated with success by electrolysis one case in which numerous operations had already been performed. When patient came to him he could pass a No. 8 sound; used No. 9 electrode, and the patient can now pass No. 15 American sound. Never had any pain or difficulty in micturating since the operation.

DR. M. B. BROWN detailed two cases of impermeable and two of permeable stricture, in which he used electrolysis with good results.

PROFESSOR C. FENGER said he must confess that he was somewhat surprised by seeing the announcement of Dr. Belfield's paper "Nine Impermeable Strictures Treated by Electro-

lysis." He had tried electrolysis a few years ago, but never had any success from it. It surprised him that Dr. Belfield should meet with nine impermeable strictures in a very short period of time, while Sir Henry Thompson has only met with three impermeable strictures in his whole life. By hearing the paper read, however, he understood that Dr. Belfield does not mean to say that the strictures were impermeable in the strict sense of the word—the only correct one—but only meant that it was difficult to pass any instrument through these strictures. Sir Henry Thompson, in his "Diseases of the Urinary Organs," of 1882, p. 28, says: "Impermeability cannot be held to describe a character, a physical quality of the stricture itself, but rather indicates the quality of the surgeon who has treated it." Impermeable stricture is a contradiction in terms; it is not heard of so much now as it was twenty years ago. Dittl, of Vienna, in speaking about relative and absolute impermeable strictures, says a stricture may be impermeable for one man, or at a certain time, and permeable for another man, or at another time. Other modern authors on surgery, as König and Albert, speak about the matter in a similar way.

The second surprise for him was the advocated treatment by electricity, or electrolysis. There has always been in his mind a suspicious halo of mysticism about the electrolysis, whether applied to the different forms of surgical tumors or to strictures of the uretha. He understands from the paper that the electrolysis does not mean galvano-caustic treatment, although quite recently Jardin, of Paris, uses a small galvano-cautery knife for passing slowly through the stricture. Dr. Belfield warns very justly against cauterization. The non-caustic electrolysis is to me a very mystic process. Professor Fenger remembered years ago one of Billroth's clinics in which

he spoke about electrolytic treatment of venous angiomas of the face, that he expressed as the result of his experience the following: "The electrolytic needle has no more or other effect on the tumor in question than the mere mechanical disturbance of the tissue elements; that is, than any other needle not connected with a battery would produce."

Frankly, Professor Fenger said that the historical fate of electrolysis in strictures as well as elsewhere, up to date, has invariably been the following: Ever since Tripier, in 1864, and Mallez, in 1872, applied the electrolysis in strictures of the urethra, this method of treatment has come to the surface once every two or three years only to disappear again, and it has never been able to take any hold on the profession; not because it has not been tried, but rather because it has not been found superior, or even equal, to the other methods. Littel states that, on the rather promising representations of Tripier and Mallez, he tried electrolysis in three cases of very narrow stricture. It proved of no effect in any of the cases, and in one of them a local inflammation followed. Sir Henry Thompson does not even mention the electric treatment anywhere in his writings about strictures, but warns very emphatically against any method of cauterization. König says, in a very short appended notice, that only the short and soft strictures depending upon a polypus or warty growth of granulation tissue are proper objects for cauterization, either chemical (Duchamp) or galvano-caustic (Middeldorf). Otis, our American authority in this line of surgery, does not mention electrolysis with a word.

Newman, of New York (*Medical Record*, August 12-19, 1882), is not only the advocate of electrolysis in this country, but has written so assiduously and specified the method so minutely as to have it termed, in the foreign literature, "New-

man's method." In 1882 Newman's old and new cases numbered twenty-three only. In reporting Newman's articles for Virchow's *Jahresbericht*, Güterbock, of Berlin, says that "Newman's method has already, in 1872 and 1876, been criticised so thoroughly that not much more need be said about it." Dikmann, in New York *Medical Record*, Jan. 5, 1884, reports twenty-eight cases. Gräf, in Norway, reports in 1884, two cases treated by "Newman's method," and Verneuil, in 1884, recommends Jardin's method—that is, cauterization.

Thus the electrolytic treatment of stricture has been tried off and on for over twenty years, but has only taken hold here and there, sporadically, and for a short time. It has in the urethral, not any more than in the other fields of surgery, as yet to any extent replaced the more rational treatment by mechanical means.

The electrolysis may, however, have a further trial, and if the success in extensive resilient strictures, as in one of Dr. Belfield's cases, should prove to hold good for other cases of that kind, it is possible that this treatment will have a better fate in the future than it has had in the past.

DR. R. TILLEY said he did not consider electrolysis to be the proper term to be used in connection with the use of electricity in the manner suggested. Electrolysis, in the ordinary acceptation of the term, means the decomposition by electricity of water, or tissues, being in the nature of a chemical decomposition. He would like to know how far apart the electrodes were placed. (Dr. Belfield replied that the negative electrode was placed in the urethra, and the positive pole in any position on or near the penis, according to the effect intended). He could not see how electrolysis could be produced with the electrodes so far apart, and a weak fluid, without a cauterizing effect. From his extensive experience of cocaine in produc-

ing contraction of the tissues in the nose, he would expect to secure as good if not better results, reasoning by analogy, in its use in strictures of the urethra as in the use of electricity. He would think its internal application would be followed by wonderful results.

DR. W. T. BELFIELD closed the discussion by saying, in reply to Dr. Fenger's criticism, that these strictures were not impermeable, he would remind him that he called six of them "theoretically permeable, practically impermeable;" that is, a feeble stream was forced through, but no instrument could be introduced. The remaining three were absolutely impermeable to urine as well as instruments. They were water-tight, the bladder in each case being immensely distended. Dr. Fenger, in the cases where he attempted electrolysis, evidently made the usual mistake: he employed a strong current and *cauterized*, but did not electrolyze, the stricture. With a proper current he would probably have a better result. Sir Henry Thompson and Professor Dittl do not, it is true, endorse electrolysis; but he knows that neither of them has ever fairly tried it; they have contented themselves with the vague, unfavorable verdict of those who, having once or twice misused the current, attribute to the battery the faults which belong to themselves. Thompson's conservatism and intolerance are notorious; he bitterly opposed Bigelow's litholapaxy (without trying it) until it was adopted by everybody else.

Possibly, as Professor Fenger says, there is no "urgent necessity" for any other method than urethrotomy and dilatation; but surgeons who have to treat many such strictures as those described in the paper under discussion, think otherwise. These methods certainly possess one point of national economic value which electrolysis lacks, namely: they assist

in repressing the excess of population by quietly removing many patients.

Electrolysis "bobs up" and down only when ignorantly used; when properly employed it comes to stay.

To Dr. Tilley he would say that the action is properly termed "electrolysis;" it is the same effect as is seen in the decomposition of water, and is produced by the same current. During the action of the current a white foam and bubbles come up alongside the instrument. Cocaine causes contraction of blood-vessels in the urethra as well as in the nose; but it cannot, so far as he is aware, remove cicatricial tissue in either locality.

In conclusion, he would repeat that the secret of success lies in securing chemical force and avoiding heat; the former removes the stricture easily and painlessly; the latter causes violent inflammation and sloughing.

OSTEO-PLASTIC RESECTION.

PROFESSOR C. FENGER then presented a patient before the Society with the following words: I wish to bring this patient before the Society to illustrate the results of an operation called "osteo-plastic resection of the foot," and devised by Wladimnoff and Mikulicz. The operation consists in removal of the heel, soft parts and bones, and then uniting the remainder of the foot to the tibia in the position of an artificial pes equinus. As you will see, the patient has on a plaster cast from the toe to below the knee, and is able to walk in this cast without crutch or cane. He limps because the leg operated upon is two inches longer than the other one, and not because of inability to step on the leg. He will have in future to wear a high sole or heel under the well foot. While this plaster cast is being taken off I shall pass round the specimen of the removed heel and say a few words about the operation.

The patient had suffered for one year from a chronic traumatic osteomyelitis of the tarsus resulting in anchylosis of the joints, fistulæ on dorsal side of tarsus and a loss of substance of the skin of the heel. Pirogoff's or Syme's operation being out of the question, the choice was only between a supramalleolar amputation and the osteo-plastic resection. This operation was performed fourteen months ago. Union of the bones took place in from four to six months, and it is only the subsequent small operations for bringing the toes in dorsal flexion that have required so long a time before the patient has been able to commence to walk.

The plaster cast being now removed, you will find the foot in the axis of the leg in equinus position, the toes dorsally flexed to a right angle with the foot. There is active flexibility of the toes and some active mobility of the foot. This mobility, however, does not take place between the united surfaces of the tibia and fibula on the one side, and the scaphoid and cuboid bones on the other; as can be seen by examining the prominences representing the rudimentary newly formed malleoli—but the mobility takes place in the joints of the metatarsus. As to the question whether these joints will be able to bear the strain of the weight of the body during walking with the foot in this abnormal position, this patient of course proves nothing as yet. But from the other cases operated upon, in all nineteen, we can conclude that we have the right to expect a useful foot for walking. A patient operated upon by Socin, in Basle, is able without boot—the boot devised by Miculicz, which I now pass round for inspection—or cane to walk, but can walk all day long and perform a farmer's work in the field. You will further notice

that the walking surface of the foot, being the plantar surface of the heads of the metatarsal bones and the toes, is considerably larger than the surface which either a Syme's or a Pirogoff's operation would leave the patient to walk on. This, together with the active mobility of the toes, is regarded as an advantage that functionally places the osteo-plastic resection superior to the two other operations mentioned.

We find by examining the foot everywhere painless on pressure, and consequently there is nowhere any recurrence of the disease.

Miculicz feared that the anterior tibial artery might not be sufficient for the blood-supply of the foot, his method of operating dividing all the branches of the posterior tibial artery. I had the same apprehension, and changed the incision so as to save one of the terminal branches of the last-named vessel, namely, the internal plantar artery. This fear is not unfounded, as in one of Sordina's cases operated upon according to Miculicz's description, gangrene of the foot necessitated supramalleolar amputation on the fourth day. The mortality of the operation is as yet none, but as all the nineteen cases have fallen within the last few years except Wladimnoff's, and consequently have been treated antiseptically, it cannot be said that the danger is less than either in Syme's or Pirogoff's operation. There is no doubt that the functional results are far superior to that of a supramalleolar amputation even if the patient will always have to wear the Miculicz boot. Consequently it may be safe to say that osteo-plastic resection has already a legitimate place, although perhaps as yet not strictly enough defined, in the surgery of the tarsus.

The Society adjourned.

THE ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

Was held in Bloomington on May 18th and 19th. Dr. W. A. Byrd presided. The attendance of members was scarcely as large as usual, a fact owing doubtless, in part, to the recent meeting of the American Medical Association in St. Louis.

Most of the committees made their reports promptly, and a fair amount of work was done.

The following is a list of the officers elected for the year.

President—W. T. Kirk, Atlanta.

First Vice-President—E. Wenger, Gilman.

Second Vice-President—W. T. Ensign, Rutland.

Permanent Secretary—D. W. Graham, Chicago.

Treasurer—Walter Hay, Chicago.

Assistant Secretary—Henry J. Reynolds, Chicago.

Chicago is the next place of meeting.

The annual meeting will be held in accordance with the constitution, on the third Tuesday in May.

Committee on Arrangements—E. Ingals, Etheridge, Starkweather, Foster and Tilley, all of Chicago.

STANDING COMMITTEES.

Practice of Medicine—D. R. Brower, Chicago; A. K. Van Horn, Jerseyville; P. H. Oyler, Mt. Pulaski.

Surgery—Dr. D. A. K. Steele, Chicago; C. Goodbrake, Clinton; B. F. Crummer, Warren.

Obstetrics—E. A. Ingersoll, Canton; C. DuHadway, Jerseyville; W. H. Conibear, Morton.

Gynæcology—O. B. Will, Peoria; J. M. Armstrong, Edwardsville; Catherine Miller, Lincoln.

Drugs and Medicines—J. G. Topper, Elgin; T. M. Cullimore, Jacksonville; M. J. Mergler, Chicago.

Ophthalmology and Otology—S. J. Jones, Chicago; A. E. Prince, Jacksonville; C. R. Parke, Bloomington.

Necrology—E. Ingals, Chicago; William Hill, Bloomington; G. W. Cox, Clayton.

Publication—J. F. Todd, Chicago.

Diseases of Throat and Nose—E. F. Ingals, Chicago.

Dermatology—Henry J. Reynolds, Chicago.

Diseases of Children—G. W. Jones, Danville; E. J. Shipp, Petersburg.

Physiology—A. Wetmore, Waterloo.

Judicial Committee—C. C. Hunt, Dixon; A. T. Barnes; Bloomington; L. G. Thompson, Lacon.

Medical and Sanitary Legislation—B. M. Griffith, Springfield; J. L. White, Bloomington; W. A. Haskell, Alton; A. B. Strong, Chicago.

Biographical—J. H. Hollister, Chicago; E. P. Cook, Mendota; E. Ingals, Chicago; G. W. Jones, Danville; F. B. Haller, Vandalia; T. F. Worrell, Bloomington; Robert Boal, Peoria; H. R. Guthrie, of Sparta.

The Incurable Insane—A. T. Barnes, Bloomington.

THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION

Was held in St. Louis on May 4th, 5th, 6th and 7th. The attendance of members was unusually large, and numbered about eleven hundred, including representatives from nearly every state in the Union, and from some of the territories. Rather more than the usual amount of work was done in the general sessions and in the sections. Much good feel-

ing prevailed, contrary to what seems to have been anticipated by some, and but little occurred to mar the pleasure attending the meeting. The provision made by the local committee of arrangements for convenience of registration was exceptionally good, and the entertainments, general and private, tendered the Association were ample to satisfy the most exacting. The following is a list of the officers elected for the year.

OFFICERS FOR 1887:

President—Dr. E. H. Gregory, St. Louis, Mo.

1st Vice-President—Dr. E. H. Miller, of Stillwater, Minn.

2nd Vice-President—Dr. W. B. Welch, of Boonesboro, Ark.

3d Vice-President—Dr. William H. Pancoast, of Philadelphia.

4th Vice-President—Dr. William C. Wile, of New London, Conn.

Permanent Secretary—Dr. William B. Atkinson, of Philadelphia.

Assistant Secretary—Dr. J. Nevins Hide, of Chicago, Ill.

Treasurer—Dr. R. J. Dunglison, of Philadelphia.

Librarian—Dr. C. H. A. Kleinschmidt, of Washington, D. C.

Committee on Necrology—Dr. J. M. Toner, of District of Columbia, Chairman; Ala., Jerome Cochran; Ark., C. Watkins; Cal., Beverley Cole; Col., T. H. Hawkins; Conn., Frank H. Whittemore; D. Columbia, C. H. A. Kleinschmidt; Del., Lewis P. Bush; Fla., R. B. Burrows; Ga., R. Battey; Ill., L. H. Montgomery; Ind., J. F. Hibberd; Iowa, J. Williamson; Kan., C. V. Mottram; Ky., R. M. Farleigh; La., J. W. Duprè; Me., A. J. Fuller; Mass., M. G. Parker; Md., T. B. Evans; Mich., S. S. H. French; Miss., B. F. Kittrell; Mo., L. Bremer; Minn., W. W. Mayo; Neb., E. M. Whitten; N. H., J. J. Berry; N. J., I. N. Quimby; N. Y., John Shrady; N. C., Eugene Grissom; Ohio, J. F. Baldwin; Pa., D. G. Brinton; R. I., C. W. Parsons; S. C., R. A. Kinloch; Tenn., J. Y. Crawford;

Tex., J. W. McLaughlin; Ver., E. F. Upham; Va., George B. McCorkle; W. Va., J. H. Pipes; Wis., S. S. Riddell; U. S. Navy, J. C. Speir; U. S. Army, M. K. Taylor; U. S. Mar. Hosp. Service, H. S. Auston; Dak. Ter., J. B. Van Velsor; N. M., G. W. Hansom.

Committee on State Medicine.—Ala., G. A. Kitchen; Ark., J. A. Dibrell, Jr.; Cal. F. H. Terrill; Col., P. R. Thomas; Conn., Geo. B. Porter; D. Columbia, J. D. Patterson; Fla., E. T. Sabal; Ga., J. A. McGaston; Ill., J. H. Hollister; Ind., J. H. Beasley; Iowa, P. W. Lewellyn; Kan., S. Schenck; Ky., Wm. Bailey; La., C. W. Day; Mass., M. C. Ledwood, Ira Russell; Md., John Morris; Mich., H. B. Baker; Miss., M. S. Grafft; Mo., J. M. Allen; Minn., W. A. Stenchfield; Neb., A. R. Mitchell; N. H., G. P. Conn; N. J., E. L. B. Godfrey; N. Y., E. S. F. Arnold; N. C., C. J. O. Hagan; Ohio, H. J. Sharp; Pa., W. Sniveley; R. I., W. T. Parker; S. C., C. Kolbrock; Tenn., J. B. Nowling; Tex., C. H. Wilkinson; Vt., H. D. Holton; Va., J. E. Chancellor; W. Va., S. D. Wilson; Wis., C. Alexander; U. S. N., A. L. Gihon; U. S. A., E. McClellan; U. S. M. H. Service, W. H. Long; Dak., J. B. Van Velsor; N. M., W. R. Tipton.

Members of Judicial Council.—N. S. Davis, Ill., H. Brown, Ky.; William Brodie, Mich.; D. J. Roberts, Tenn.; R. C. Moore, Neb.; T. A. Foster, Me.; James A. Gray, Ga.

Trustees of THE JOURNAL.—P. O. Hooper, Ark.; A. Garcelon, Me.; L. S. McMurtry, Ky.

Place of next meeting, Chicago, Ill., the first Tuesday in June, 1887; Chairman of the Committee of Arrangements; Charles Gilman Smith, M. D., of Chicago.

The next annual meeting will be held in Chicago, in June, 1887.

THE AMERICAN SURGICAL ASSOCIATION met in Washington, D.C., on May 28th and continued in session four days. Professor Moses Gunn presided. Many good papers were presented and discussed.

A proposition was considered by the Association to organize a CONGRESS, to be formed by the various SPECIAL SOCIETIES in the United States, and to meet annually in Washington. Its further discussion was deferred to the next annual meeting, and a committee was appointed to consider the proposition and to report next year.

By some it is charged that this is but an attempt to supplant the American Medical Association by those who no longer feel an interest in the prosperity of the old National Association, which it must be admitted represents more fully than any other in existence in our country, the whole medical profession in the United States.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION held its annual meeting in Philadelphia, Pennsylvania, on May 27th, 28th and 29th. Dr. Harrison Allen presided. The number and the character of the papers presented during the session gave evidence of the interest taken in that specialty, and of the progress made in it in the last few years.

Professor E. F. Ingals, of this city, was elected president for the next year.

THE ASSOCIATION OF AMERICAN MEDICAL EDITORS met in St. Louis on May 3rd. The annual address of the President, Professor H. O. Walker, M. D., of Detroit, was delivered and the annual election resulted in the selection of

Professor John V. Shoemaker, M. D., of Philadelphia, for president.

The Association was tendered a banquet by the Medical Press and Library Association of St. Louis.

THE NINTH INTERNATIONAL MEDICAL CONGRESS.

At the meeting in St. Louis, on May 3rd, of the executive committee of the International Medical Congress of 1887, the existing vacancies in the presidencies of the congress and of sections were filled. The section of otology and laryngology was divided, and the section of laryngology was restored. Professor N. S. Davis, of Chicago, Illinois, was elected president of the congress. Supervising surgeon-general J. B. Hamilton, of the Marine Hospital service, was elected secretary-general. Professor A. B. Palmer, of the University of Michigan, was elected president of the section of pathology. Professor J. F. Harrison, of the University of Virginia, was elected president of the section of gynæcology, and Professor J. H. Callender, of the Nashville and Vanderbilt University, president of the section of physiology. Dr. H. O. Marcy requested to be transferred from the section of collective investigation, etc., to the section of gynæcology, which was done, and Medical Director A. L. Gihon, of the United States Navy, was elected president of the section of collective investigation, etc. Professor A. W. Calhoun requested transfer from the presidency of the section of ophthalmology, which was acceded to, and Professor E. Williams, of the Miami Medical College of Cincinnati, was elected president of the section of ophthalmology. Dr. W. H. Daly, of Pittsburg, Pennsylvania, was elected president of the section of laryngology.

The office of associate secretary-general was abolished.

Very satisfactory reports were made to the committee of replies received from prominent members of the medical profession in Europe, indicating their intention to attend the congress and to furnish papers.

Having completed the preliminary organization of the congress, so far as the more important official positions are concerned, and arranged the details of the work in preparation, the executive committee adjourned.

The Enlarged Committee of Arrangements of the American Medical Association was instructed at the meeting in New Orleans, last year, to revise the report of the preliminary work of organizing the Ninth International Congress made at that meeting, and it reported at St. Louis that it had revised the work and made some few changes in the organization, and adopted rules for the government of the Congress, and selected general officers for the congress and presidents of sections who together should constitute an *executive committee*, and that to this executive committee the affairs of the congress had been committed. This report of the committee of arrangements was received by the American Medical Association and unanimously adopted, thereby discharging its committee of arrangements and ending all official connection of the Association with the congress. Therefore the future work of preparation for the opening of the congress in September, 1887, is left entirely in the hands of the executive committee, and the local committee of arrangements in Washington.

A correct list of the officers of the congress to this date is as follows:

GENERAL OFFICERS OF THE INTERNATIONAL CONGRESS OF 1887.

President—N. S. Davis, M. D., LL. D., Chicago, Illinois.

Vice-Presidents—Wm. Brodie, M. D., Detroit, Michigan; W. W. Dawson, M. D., Cincinnati, Ohio; J. A. Grant, M. D., Ottawa, Canada; E. M. Moore, M. D., Rochester, New York; Tobias G. Richardson, M. D., New Orleans, Louisiana; Lewis A. Sayre, M. D., New York, N. Y.; J. M. Toner, M. D., Washington, D. C.; The President of the American Medical Association; The Surgeon-General of the United States Army; The Surgeon-General of the United States Navy; The Supervising Surgeon-General of the United States Marine Hospital Service.

Secretary-General—John B. Hamilton, M. D., Washington, D. C.

Treasurer—E. S. F. Arnold, M. D., F. R. C. S., New York, N. Y.

Chairman of the Finance Committee—Richard J. Dunglison, M. D., Philadelphia, Pennsylvania.

Executive Committee of the Congress—Henry H. Smith, M. D., Chairman, Philadelphia, Pennsylvania; Abram B. Arnold, M. D., Baltimore, Maryland; E. S. F. Arnold, M. D., F. R. C. S., New York, N. Y.; Wm. T. Briggs, M. D., Nashville, Tennessee; J. H. Callender, M. D., Nashville, Tennessee; N. S. Davis, M. D., LL. D., Chicago, Illinois; F. S. Dennis, M. D., F. R. C. S., New York, N. Y.; Richard J. Dunglison, M. D., Philadelphia, Pennsylvania; Albert L. Gihon, M. D., Medical Director U. S. Navy, Washington, D. C.; John P. Gray, M. D., LL. D., Utica, New York; John B. Hamilton, M. D., Washington, D. C.; James F. Harrison, M. D., Virginia; S. J. Jones, M. D., LL. D., Chicago, Illinois; Joseph Jones, M. D., New Orleans, Louisiana; DeLaskie Miller, M. D., Chicago, Illinois; A. B. Palmer, M. D., LL. D., Ann Arbor

Michigan; Wm. H. Pancoast, M. D., Philadelphia, Pennsylvania; A. R. Robinson, M. D., New York, N. Y.; J. Lewis Smith, M. D., New York, N. Y.; Jonathan Taft, M. D., Cincinnati, Ohio; F. H. Terrill, M. D., San Francisco, California; E. Williams, M. D., Cincinnati, Ohio.

Local Committee of Reception and Arrangements—A. Y. P. Garnett, M. D., Washington, D. C., Chairman; The Surgeon-General of the U. S. Army; The Surgeon-General of the U. S. Navy; The Supervising Surgeon-General of the U. S. Marine Hospital Service; J. H. Baxter, M. D., U. S. Army; C. H. A. Kleinschmidt, M. D., Washington, D. C.; N. S. Lincoln, M. D., Washington, D. C., J. M. Toner, M. D., Washington, D. C.

PRESIDENTS OF THE SECTIONS.

General Medicine—Abram B. Arnold, M. D., Professor of Clinical Medicine, Baltimore, Maryland.

General Surgery—William T. Briggs, M. D., Professor of Surgery, Nashville, Tennessee.

Military and Naval Medicine and Surgery—Henry H. Smith, M. D., formerly Professor of Surgery and Surgeon-General of Pennsylvania, Philadelphia, Pennsylvania.

Obstetrics—DeLaskie Miller, M. D., Ph. D., Professor of Obstetrics, Chicago, Illinois.

Gynæcology—James F. Harrison, M. D., Professor of Obstetrics, etc., University of Virginia.

Therapeutics and Materia-medica—F. H. Terrill, M.D., Professor of Therapeutics, San Francisco, California.

Anatomy—William H. Pancoast, M. D., Professor of Anatomy, Philadelphia, Pennsylvania.

Physiolgy—J. H. Callender, M. D., Professor of Physiology, Nashville, Tennessee.

Pathology—A. B. Palmer, M. D., LL. D., Professor of Pathology, etc., Ann Arbor, Michigan.

Diseases of Children—J. Lewis Smith, M. D., Professor of Diseases of Children, New York, N. Y.

Ophthalmology—E. Williams, M. D., Professor of Ophthalmology and Otology, Cincinnati, Ohio.

Otology—S. J. Jones, M. D., LL. D., Professor of Ophthalmology and Otology, Chicago, Illinois.

Laryngology * * *

Dermatology and Syphilis—A. R. Robinson, M. D., Lecturer on Dermatology and Syphilis, New York, N. Y.

Public and International Hyhiene—Joseph Jones, M. D., Professor of Clinical Medicine, etc., New Orleans, Louisiana.

Collective Investigation, Vital Statistics and Climatology—Albert L. Gihon, Medical Director U. S. Navy, Washing, D. C.

Phychological Medicine and Nervous Diseases—John P. Gray, M. D., LL. D., Professor of Psychological Medicine, etc., Utica, New York.

Dental and Oral Surgery—Jonathan Taft, M. D., Professor of Dental and Oral Surgery, Cincinnati, Ohio.

DOMESTIC CORRESPONDENCE.

LIABILITY FOR MISTAKES IN DISPENSING DRUGS.

TO THE EDITORS OF THE *Chicago Medical Journal and Examiner.*

Gentlemen:

A recent case occurred in Iowa which has been largely noticed by medical journals within the last few weeks. The facts are that the druggist was filling a prescription, calling for extract of dandelion, from a jar containing extract of belladona, and a customer proceeded to help himself. The symptoms caused were so immediate and violent that the prescription was not dispensed. The customer brought suit against the druggist, who instituted the defense that the customer was a trespasser in helping himself, and could not hold the apothecary responsible. The defense was brushed aside by the court, who held that, if the customer took the dose from the same jar used by the apothecary, it was under an implied promise to pay, and in this view of the case he could not be held to be a trespasser. The apothecary was held liable in damages.

With the justice of the above ruling in this case but little fault can be found, but the theory of an implied promise to pay presupposes consent on the part of the druggist; and the question then arises, what constitutes "consent," and must it be expressed or implied? Another possible ruling, suggested by the case, is that every individual must exercise at least

ordinary care to protect himself from injury or accident, and that in taking articles not directly dispensed by the druggist, he is guilty of gross carelessness and ought not to recover, though he may not be technically a trespasser.

MEDICUS.

BOOK REVIEWS.

DIAGNOSIS OF DISEASES OF THE BRAIN AND OF THE SPINAL CORD. *By* W. R. GOWERS, M. D., F. R. C. P., ASSISTANT PROFESSOR OF CLINICAL MEDICINE IN UNIVERSITY COLLEGE; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND TO THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC. *Pp. VIII, 293. New York:* WILLIAM WOOD & CO. *Chicago:* W. T. KEENER.

This work bears the same relation to the general subject of the diseases of the nervous system that one on physical diagnosis does to internal medicine. The object is to give the student a clear idea of the general principles upon which a diagnosis is made, and only so much of anatomy and physiology as will enable him to come to a conclusion.

The first eighteen lectures are devoted to the study of the brain and its disorders and are published in response to a request from many readers of the author's work on the "Diagnosis of the Diseases of the Spinal Cord." Those who have formed a high opinion of Professor Gowers' work will not be disappointed by a perusal of this work on the brain. He brings to the task the same ripe clinical experience, thorough knowledge of all the latest researches in this special branch,

and lastly a keen appreciation of the difficulties which beset the beginner.

The last portion of the book is merely a reprint of the author's work on the cord. It is not mentioned in the preface, and is evidently merely bound in the volume by the publishers. This arrangement leads to a certain want of continuity which the reader will find does not exist when studying these disorders.

We trust the author will remedy this defect by incorporating these two excellent monographs in a larger work on the "Diagnosis of Diseases of the Nervous System."

H. N. M.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE. *For the use of physicians and students. By* JAMES TYSON, M. D., *Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania; one of the Physicians to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc., etc., etc. Fifth edition. Revised and corrected. With colored plates and wood engravings. Pp. XII, 249.*

That the profession has called for five editions of this manual within a comparatively short time is evidence of its value. Within the last few years much has been added to our knowledge of the chemistry of the urine. Facts have been observed and theories propounded without number, and like other rapidly advancing sciences our knowledge is at the same time more than we can use and less than we desire.

From this mass of new material Professor Tyson has carefully selected the most useful portions, and those which have stood the test of experience. The new tests for albumen, and

the increased importance of the peptones and mucin receive full consideration.

The work is not a treatise on the chemistry of the urine, but as a working manual for the office and laboratory it has no superior. H. N. M.

THE FIELD AND LIMITATION OF THE OPERATIVE SURGERY OF THE HUMAN BRAIN. *By* JOHN B. ROBERTS A. M., M. D., *Professor of anatomy and surgery in the Philadelphia Polyclinic, surgeon to St. Mary's Hospital. Large octavo, pp. 80. Philadelphia:* P. BLAKISTON, SON & CO. *Chicago:* W. T. KEENER.

This essay is a reprint of a paper presented to the American Surgical Association at the 1885 meeting. To those not having a copy of the transactions of the Association, we would say the work contains a complete epitome of the present status of cerebral surgery. It is to be regretted that the valuable discussion which followed the reading of this paper is not appended to the reprint.

BOOKS RECEIVED.

Electricity in Medicine. By Ambrose L. Ranney, M. D. New York: William Wood & Co. Chicago: W. T. Keener.

A Manual of Operative Surgery. By Lewis A. Stimson, B. A., M. D. Second edition. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

The Blot Upon the Brain. By William W. Ireland, M. D., Edin. New York: G. P. Putnam's Sons. Chicago: A. C. McClurg & Co.

The Principles and Practice of Medicine. By Charles Hilton Fagge, M. D., F. R. C. P. Volume I. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

The Science and Art of Surgery. By John Eric Erichsen, F. R. S., LL.D., F. R. C. S. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

The Diseases of Sendentary and Advanced Life. By J. Milner Fothergill, M. D. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co.

Transactions of the American Surgical Association. Volume III. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

An Atlas of Clinical Microscopy. By Alexander Peyer, M. D.

The Principles and Practice of Surgery. By John Ashurst, Jr., M. D. Fourth edition. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

Lectures on the Principles of House Drainage. By J. Pickering Putnam. Boston: Ticknor & Co. Chicago: A. C. McClurg & Co.

A Manual of Microscopical Technology. By Stephen Yates Howell, A. M., M. D. New York: G. P. Putnam's Sons. Chicago: A. C. McClurg & Co.

Essentials of Vaccination. By W. A. Hardaway, M. D. St. Louis: J. H. Chambers & Co.

Insanity and its Treatment. By G. Fielding Blandford, M. D., Oxon. New York: William Wood & Co. Chicago: W. T. Keener.

Diseases of the Spinal Cord. By Byrom Bramwell, M. D., F. R. C. P., (Edin.). New York: William Wood & Co. Chicago: W. T. Keener.

A Compend of Pharmacy. By F. E. Stewart, M. D., Ph. G. Philadelphia: P. Blakiston Son & Co. Chicago: W. T. Keener.

Saint Bartholomew's Hospital Reports. Volume XXI. Edited by W. S. Church, M. D., and John Langton, F. R. C. S. London: Smith, Elder & Co.

Twelfth Annual Report of the Secretary of the State Board of Health, of the State of Michigan.

The Principles and Practice of Surgery. By Frank Hastings Hamilton, A. M., M. D., LL.D. New York: William Wood & Co. Chicago: W. T. Keener.

A Treatise on Bright's Disease of the Kidneys. By Henry B. Millard, M. D., A. M. New York: William Wood & Co. Chicago: W. T. Keener.

A Reference Handbook of the Medical Sciences. Volume II. New York: William Wood & Co. Chicago: W. T. Keener.

The International Encyclopædia of Surgery. Volume VI. New York: William Wood & Co. Chicago: W. T. Keener.

Dictionary of Practical Surgery. Edited by Christopher Heath, F. R. C. S. Philadelphia: J. B. Lippincott & Co. Chicago: A. C. McClurg & Co.

Handbook of Practical Medicine. By Dr. Hermann Eichorst. New York: William Wood & Co. Chicago: W. T. Keener.

A Manual of the Diseases of the Skin. By Balmano Squire, M. D., London. Chicago: A. N. Marquis & Co.

Lectures on Dietetics and Dyspepsia. By Sir William Roberts, M. D., F. R. S. London: Smith, Elder & Co. Chicago: A. C. McClurg & Co.

Haschisch. By Thorold King. Chicago: A. C. McClurg & Co.

A Manual of Surgery. Volume I. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

Surgical Diseases of the Kidneys. By Henry Morris, M. A., M. B., F. R. C. S. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

A Manual of Surgery. Volume II. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

The Student's Manual of Venereal Diseases. By Berkeley Hill, M. D., and Arthur Cooper, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

A Manual of Surgery. Volume III. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

The Surgical Diseases of Children. By Edmund Owen, M. B., F. R. C S. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

The Genuine Works of Hippocrates. By Francis Adams, LL.D. Volume I. New York: William Wood & Co. Chicago: W. T. Keener.

Diseases of the Digestive Organs in Infancy and Childhood. By Louis Starr, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

First Annual Report of the State Board of Health of the State of Kansas.

The Best Preliminary Education for the Study of Medicine. Boylston Prize Essay, 1885.

Drainage for Health, or Easy Lessons in Sanitary Science. By Joseph Wilson, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

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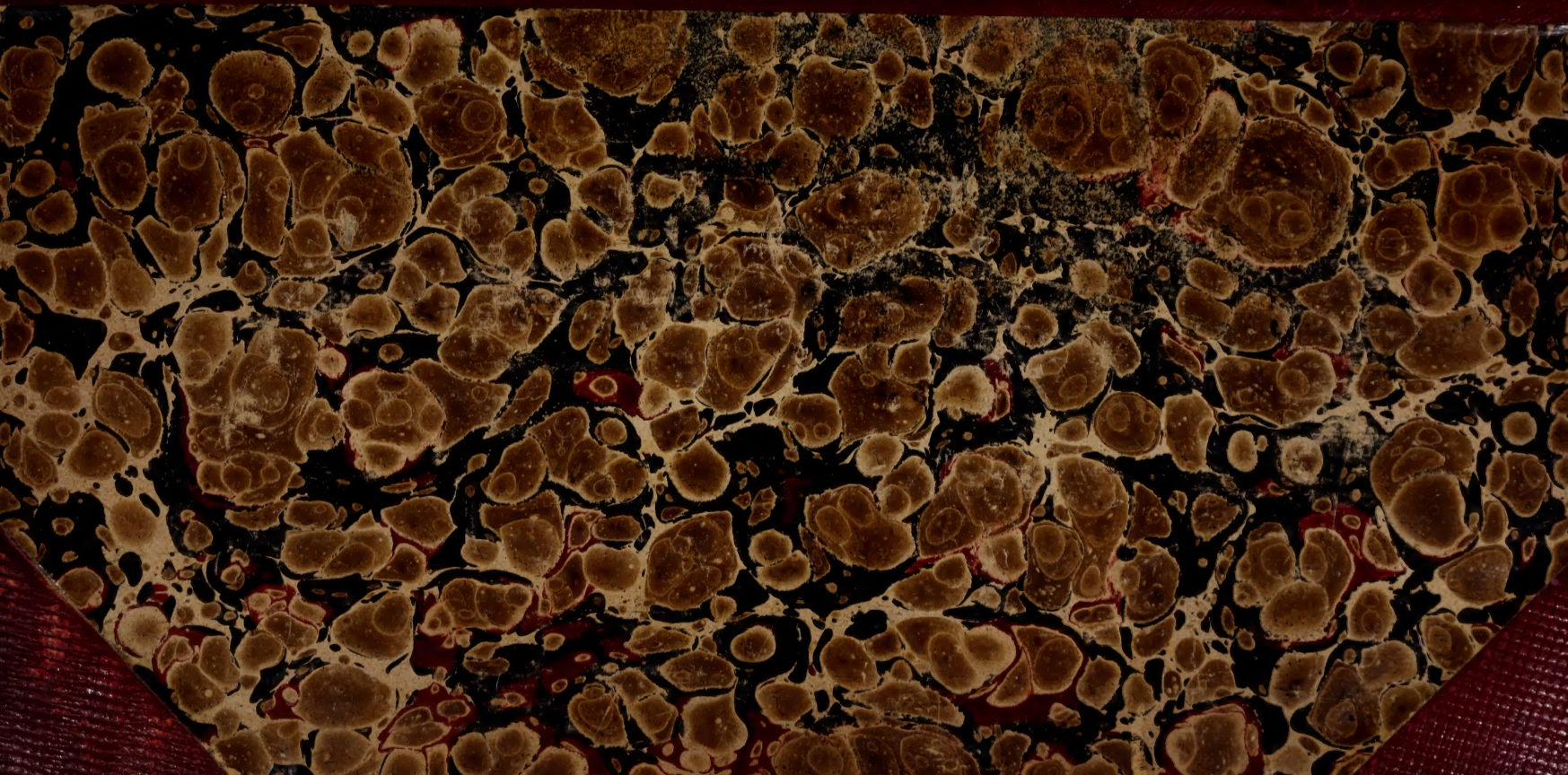
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